CORNELL
LAB of ORNITHOLOGY

LIBRARY
at Sapsucker Woods

Illustration of Bank Swallow by Louis Agassiz Fuertes

CORNELL UNIVERSITY LIBRARY
3 1924 090 254 370

DATE DUE

GAYLORD
PRINTED IN U.S.A.

Ornith
QL
671
L781
v.18-19
1999-2000

LIVING BIRD

For the Study and Conservation of Birds

WINTER 1999

The Ultimate Ice & Water Glass.

Many people feel that Swarovski Optik offers the finest binoculars on the planet when you consider value and performance, and perform they will... under the very worst of conditions!

Swarovski binoculars are filled with nitrogen, sealed against moisture and carry a Limited Lifetime Warranty.*

Swarovski optics were chosen to accompany the '95 American Mt. Everest Expedition. "Swarovski optics performed flawlessly under the worst of conditions. They really came through and helped us succeed", Colin Lynch, Deputy Expedition Leader shown on the summit of Everest with his Swarovski Optik binoculars.

Swarovski optics have been chosen to go to the top of Mt. Everest as well as to the bottom of some of the dampest holes in Central America.

All Swarovski binoculars are extremely rugged and waterproof/submersible. Every lens element is fully multi-coated. Roof prisms are phase corrected for ultimate light transmission and brilliant image resolution.

All Swarovski SLC binoculars are center focusing and light in weight. Full multi coatings and phase corrected roof prisms give over 98% light transmission!

Try a pair yourself. See the ultimate in bright and sharp images. See birds and wild life as you have never seen them before. We offer 8X30, 7X42, 10X42, 7,8, &10X50 and the new 8X56 SLC models.

Call 800-426-3089... We'll send more information or visit us at www.swarovskioptik.com

Swarovski Optik North America, Ltd.
One Wholesale Way, Cranston, RI 02920

SWAROVSKI
OPTIK

With The Eyes of a Hawk

*Original warranty card must be postmarked within 30 days of purchase from an authorized Swarovski dealer in good standing.

Entire product must be returned with warranty claim by registered warranty holder.

A Publication of the Cornell Laboratory of Ornithology

LIVING BIRD

WINTER 1999 VOLUME 18 NUMBER 1

SPECIAL ANNUAL REPORT ISSUE

GREETINGS FROM SAPSUCKER WOODS

As I write this column, it's early December in Ithaca, but you'd never know it. Outside my office window at Sapsucker Woods, the sun is shining brightly, the pond (still unfrozen) is glistening a deep blue, reflecting a cloud-free sky, and the temperature is hovering in the mid-sixties—practically balmy for Ithaca. No snow, no icy blasts of wind from the North, no goose-down parkas.

What's going on here? Is this the start of significant global warming or just a temporary change in climate patterns driven by El Niño last year, followed by his kid sister, La Niña? Whatever the cause, today's temperature was 20 degrees above normal in the Northeast, Midwest, and Rocky Mountain regions. How will these unusual climatic conditions affect bird populations?

As we approach the new millennium, the Lab is uniquely poised to monitor changes in the distribution and numbers of many bird species across North America. We're creating the online technology to make large-scale data gathering ever faster and simpler. We're exploring new methods for monitoring bird populations and measuring the effects of environmental changes. And we're continuing to develop the massive network of citizen-science participants, who are becoming such vital partners in all of our research and conservation efforts.

In this special issue, we're pleased to highlight our programs and citizen-science projects in the 1998 Annual Report (page 34), written by Lab director John Fitzpatrick. Thank you for supporting the Lab and best wishes for the year ahead.

Tim Gallagher
Editor-in-Chief

Cover: One of the most popular birds in America, the Northern Cardinal adds brightness and color to the bleakest winter day. Photograph by Richard Day/Daybreak Imagery.

Right: A Steller's Jay huddles in a frosty willow on a crisp winter morning at California's Yosemite National Park. Photograph by Michael Frye/Earthlight.

Back Cover: "Wake me up when it's springtime." Hiding behind a tree trunk, a Northern Flicker keeps its head tucked in and feathers fluffed out to keep warm in an icy breeze. Photography by Richard Day/Daybreak Imagery.

10 BG WILDLIFE PHOTOGRAPHER OF THE YEAR
by Tim Gallagher
For the past 15 years, the top nature photographers in the world have vied in this prestigious British photography competition. Here's a sampling of the bird images that were honored this year.

18 BIRDING IN AMERICA . . . IN THE 18TH CENTURY
by Marcia Bonta
Long before John James Audubon brought the birds of this continent to the world, naturalist Peter Kalm wrote of America's avian treasures.

26 LAST STAND IN THE ARKANSAS DELTA
by John J. Gschwend, Jr.
Preserving the chain of the Red-cockaded Woodpecker's existence—one link at a time.

34 ANNUAL REPORT 1998 *by John W. Fitzpatrick*
Highlights of Lab programs and growth in the year just ended—all made possible through the commitment of our members and friends.

Departments

4 LETTERS

5 BIRDNEWS

44 CRITICS' CORNER

Columns

6 FLYING FIELD *by Mel White*
Rocky Mountain High

42 IN THE FIELD *by Jack Connor*
The Sparrows of Sable Island

46 THE CATBIRD SEAT *by Pete Dunne*
Birding Products for the 21st Century

LIVING BIRD

WINTER 1999 VOLUME 18 NUMBER 1

Editorial Staff

Editor-in-Chief: Tim Gallagher
Design Director: Kat Dalton
Associate Editor: Leslie Intemann
Technical Editors: Kevin J. McGowan
Kenneth V. Rosenberg
Publications Assistant: Patty Porupski
Contributing Editors: Jack Connor
Pete Dunne
Mel White
David Wilcove
Advertising Manager: Barbara Guttridge

Administrative Staff

Louis Agassiz Fuertes Director
John W. Fitzpatrick

Associate Director
Scott Sutcliffe

Director, Education/Citizen Science
Richard E. Bonney, Jr.

Director, Bioacoustics Research Program
Christopher W. Clark

Director, Bird Population Studies
André A. Dhondt

Director, Conservation Science
John W. Fitzpatrick

Director, Publications
Tim Gallagher

Curator, Library of Natural Sounds
Greg Budney

Curatorial Associate, Systematics & Collections
Kevin J. McGowan

Director, Operations
Carol Pyhtila

Administrative Board

E. Edward Bruce
Peter J. Bruns
David L. Call
Jean W. Douglas
Theodore L. Eliot, Jr.
Jane C. Engel
Mary P. Hines
Bruce S. Howard
Imogene P. Johnson
Mary L. Kiplinger
Frank Y. Larkin
Randolph S. Little
Edwin H. Morgens
Wendy J. Paulson
Olin Sewall Pettingill, Jr.
Frank H. T. Rhodes
Edward W. Rose III
Robert F. Schumann
Carol U. Sisler
Stanley A. Temple
Charles E. Treman, Jr.
Charles Walcott
Joseph H. Williams
David W. Winkler

Living Bird, ISSN 1059-521-X, is published in January, April, July, and October by the Cornell Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Telephone: (607) 254-BIRD. *Living Bird* is free to members of the Laboratory, a nonprofit, membership organization dedicated to the study, appreciation, and conservation of birds. For more information please write to our Membership Department. Membership is $35 a year. The Laboratory assumes no responsibility for unsolicited photographs or manuscripts. © 1999 Cornell Laboratory of Ornithology. Visit our web site at <http://birds.cornell.edu>.

Printing by Brodock Press, Utica, New York.

Printed on recycled paper.

Letters

TIM GALLAGHER

An adult Gyrfalcon—a fitting symbol of Iceland.

THE COURAGE TO BE LONG-WINDED

I once visited Iceland, staying for a week in the area around Reykjavík. But the article "Iceland Journal" in your Autumn 1998 issue showed me a side of the country I never even imagined. What a story! You captured the rugged terrain, the history, the myths, the distinctiveness of the people, as well as the birdlife—all in one article. Thank goodness that *Living Bird* is one magazine that is willing to devote enough space to a topic to tell the whole story. So many other magazines seem to be racing each other to see who can print the shortest articles, trying desperately to cater to the supposedly diminishing attention span of the American public. Talk about a self-fulfilling prophesy. Thank you for having the courage to buck this trend.

Mary Arnold
Seattle, Washington

YOU CAN'T MISS IT

I just finished reading, for the third time, the amusing article by Pete Dunne in the Autumn 1998 issue of *Living Bird* ("Directions, Please"). I had to chuckle because it reminded me so much of my husband and I.

I have numerous bird feeders in our backyard. And, living on the edge of town, fields are nearby, and there's a nice view of the mountainside. Birds are plentiful. On various occasions, I have called my husband's attention to the bird I'd spotted through the sliding glass door. He could never seem to find it. Sometimes I'd wonder if we spoke the same language! (Yes, Mr. Dunne. I'm guilty of that all-encompassing phrase: "It's right in front of you!") I wonder what Pete Dunne would think of my "diagonally out from the olive tree" or "just to the left of the three trees in the field."

This article has made me pause and think. From now on, maybe I will have to choose my "directions" more carefully. Ah, yes, that story hit home.

Gail Malecki
Bath, New York

CONGRATULATIONS!

I would just like to congratulate you on an exceptionally fine issue of *Living Bird* (Autumn 1998). Both the pictures and the text were outstanding. The Iceland story was thrilling.

Harold F. Mayfield
Toledo, Ohio

WHERE AM I?

The Autumn 1998 issue of *Living Bird* was a wonderful mixture of beautiful photographs and great articles, covering the world from Iceland to Australia, with stops at the Everglades, Montana, Idaho, and Colombia. But not one article contained a map. I like to know where I'm being transported to when I read an article. Highway maps are useful for the articles about areas in the United States, but Iceland and Australia are not in my usual driving areas.

Lawrence D. Daley
Cazenovia, New York

We welcome letters from readers. Write to The Editors, *Living Bird,* 159 Sapsucker Woods Road, Ithaca, New York 14850, or send e-mail to <livingbird@cornell.edu>.

Great Backyard Bird Count 1999: The Sequel

Last year the Lab launched the first Great Backyard Bird Count, inviting bird enthusiasts throughout North America to tally the birds they saw on February 19–21, 1998. They reported their sightings via the Internet to BirdSource (http://birdsource.cornell.edu), an interactive web site developed and maintained by the Lab in partnership with the National Audubon Society. This survey, the first of its kind, was a phenomenal success, with some 14,000 people reporting more than half a million birds seen at their feeders, local parks, and natural areas during the three-day period.

The count yielded some interesting El Niño-related finds. For example, a number of species (such as the American Robin) that typically winter in southerly regions were reported in higher-than-usual numbers across New England and into the Canadian provinces, perhaps because of the unseasonably mild weather throughout the Northeast induced by El Niño. This year's post–El Niño reports should provide some interesting comparisons between the 1998 and 1999 data.

We hope to see many more people (especially Lab members and project participants) taking part in the 2nd Annual Great Backyard Bird Count, February 19–22, 1999. "We're in the process of creating a vast database that will allow us to look at long-term population trends of North American birds," says Lab director John Fitzpatrick. "The more information we have, the better we'll be able to help ensure that our common birds will remain common and take measures to protect species already in decline."

Like last year, the 2nd Annual Great Backyard Bird Count will feature images and vocalizations of many North American birds. Log on and you'll find range maps and graphs showing population trends, species distribution, and more. And we'll once again be creating maps based on the new survey data throughout the count, so you'll be able to see quickly how your observations are contributing to the continentwide perspective. We've also made some changes that will make the count easier and even more interesting.

The most significant change is the checklists themselves. Every region will no longer have to use the same checklist of birds. At the Great Backyard Bird Count web site this year, you'll find a map of the United States. Click on your state, and you'll get a custom checklist featuring the most frequently reported birds in your region, based on Christmas Bird Count data from the past 10 years. This means you won't have to spend time looking through species that are unlikely to be seen in your area.

We've also put together materials to make it easier for schools to get involved. Our "Let's Talk About Birds" vocabulary list will help students learn words associated with birds and their environments. Our "Bird-brained Bibliography" suggests useful reference books, field guides, and even novels for educators, students, and beginning birders. And this year we have expanded the count from three to four days, which teachers will appreciate. In 1998, many classrooms logged on during Friday, the first day of the count. But now teachers can work the count into their schedule on Friday or the following Monday—or both.

Our major Great Backyard Bird Count sponsors, Ford Motors and Wild Birds Unlimited, as well as Droll Yankees, helped make these improvements possible by providing extra funding. Wild Birds Unlimited is also assisting with the count; throughout the country, company stores will be entering reports for bird enthusiasts who want to participate but don't have access to the Internet. For more information, call the company's toll-free number at (800) 326-4WBU.

If you haven't visited the BirdSource web site lately, log on and give it a look. You can find last year's Great Backyard Bird Count data in an easy-to-read, pull-down list. Just click on the species and the state or province, and you'll quickly be able to see which species were reported most frequently and which were most abundant there.

BILL MARCHEL

The Black-capped Chickadee is just one of the many species that Great Backyard Bird Count participants will be tallying this coming February 19–22.

We hope you'll participate in this year's count. Your 1999 observations will contribute to another year of vital information for determining the status of North American birds. The volume of useful data gathered by such a large number of citizen scientists over a continentwide range is incredible. "Bird watching is enjoyed by millions of people every day," says Frank Gill, senior vice president for science at the National Audubon Society. "Combined with the cutting-edge Internet technology of BirdSource, this observation power will allow us to begin immediately assessing the distribution and abundance of North American feeder birds."

For more information about the 2nd Annual Great Backyard Bird Count, write the Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850 or call (800) 843-BIRD. —*Allison Childs Wells*

ROCKY MOUNTAIN HIGH

By Mel White

Sometimes the greatest rewards arrive after you've stopped trying to earn them

Colorado seemed a magical place to me long before I ever went there. Why this was so, I can't remember; the reason is lost with vanished childhood. It might have been a story I read or a 1950s black-and-white adventure movie—the kind with Stewart Granger doing brave deeds in fringed buckskin. It might have been something as simple as a photograph in *National Geographic* that transfixed me and stuck in my memory; something I could recall if only I could trace back through the synapses to one particular image of mountains and trees.

Or, mountains without trees. Like bare spots in a green carpet, those picture-book peaks poked up through the forest to an otherworldly land called the tundra. Imagine: terrain so high that the ice never completely melts, so high that no trees can grow. It was an amazing concept for a kid from Arkansas, where, once anyway, trees grew everywhere except where rivers flowed, and in some cases there, too.

Driving west across Kansas the first time, I really thought that I'd see a big sign reading "Welcome to Colorado," and on the other side would be . . . well, a Coors beer ad. Snow-capped mountains rising from forests of spruce and fir, rocky streams throwing themselves off cliffs, elk standing around like movie extras hired through a casting call for majestic types. Instead, I got to the state line and found more Kansas. Dry rolling grassland. And cows.

At a highway rest stop in Kansas, I'd seen Eastern and Western kingbirds perched side by side, a symbol of geographic transition. At a gas station in Colorado, Lark Buntings and a yodeling Western Meadowlark told me I had crossed the line. I kept peering ahead, mistaking clouds for mountains, until finally, much closer to Denver than I would have guessed, there were mountains I mistook for clouds.

I was accompanying a friend who was going to summer school at Boulder, and as soon as I dropped her off on the University of Colorado campus I headed straight up those mountains, to Rocky Mountain National Park. I've been going back ever since.

The reality, you see, was better than the construction of my imagination. A new set of western and mountain birds, seen for the first time in one of the most spectacularly beautiful places in the world, infected me with what, more than 20 years later, remains a singular obsession. I remember standing in a clearing and watching (and hearing) Broad-tailed Hummingbirds zooming like metallic flying toys. I scuttled into a thicket on my hands and knees to get a glimpse of a MacGillivray's Warbler. An oriole sang prettily, seemingly unconcerned by its recent (and, as it turned out, temporary) demotion from Bullock's to western Northern Oriole. No doubt it knew something we didn't.

I had time for one quick drive up Trail Ridge Road, which climbs to more than 12,000 feet before heading down the other side of the Continental Divide. In early

DONALD M. JONES

"When I turned around to go home a Western Tanager, as handsome as any of its tropical kin, was waiting as if to say, 'Bye, and come back soon, okay?'"

June, it was closed by snowdrifts at Rainbow Curve, just past the sign that says you're two miles above sea level. No tundra for me this trip, then. Trees still grew at this altitude, if only stunted ones with most of their limbs on the lee side. On the way up, I'd seen a Townsend's Solitaire flying out from one of the road-cuts the species has adopted as nesting habitat. At the curve, a Clark's Nutcracker perched on the tip of a mostly bare spruce, and when I turned around to go home a Western Tanager, as handsome as any of its tropical kin, was waiting down below as if to say, "Bye, and come back soon, okay?"

I did, and soon enough I discovered the perfect time to visit Rocky Mountain National Park: the third week in September, when the summer crowds have thinned out, the elk are bugling, and you can pick the color of aspens you like best: green, yellow, or intense gold, depending on how far up the slope and how far from water they're growing. The air at night says with certitude that winter is coming, and some mornings a dusting of snow coats the mountains. But when you set off on the day's hike, you're soon shedding layers; by afternoon it's T-shirts and shorts, and make sure you've got plenty of water in the pack.

I hiked all over the park, taking the trails that guidebooks and park naturalists said were best for the birds I wanted to see. In Wild Basin, where fire had destroyed a huge area of forest a few years before, my first Three-toed Woodpecker was pecking quietly on a dead spruce with decaying but still-attached bark—part of a ghost woodland with new green growth shooting up among the blackened trunks. Up on the tundra, where the air is as transparent as it is insubstantial, Brown-capped Rosy-Finches were right where they were supposed to be, gleaning frozen insects from a glacier.

Over time, hiking for hiking's sake took precedence over birding. With each trip west, I'd study the park map, looking for mountain lakes or waterfalls I hadn't seen yet, trails I hadn't walked. I'd draw up a list of daily destinations, filling up my week at the park before I'd even arrived. Each morning I'd arise before dawn to be at the trailhead before anyone else, and I'd set out with some goal in mind for the day.

ALAN FUCHS

"I followed miles of rocky streams looking for an American Dipper, until it dawned on me that simply sitting down on a comfortable streamside rock might be the best way to look. It worked the first time, and it has every visit since."

A lesson was waiting for me in those magnificent mountains, and the birds were my instructors. Trip after trip, I searched in vain across expanses of tundra for White-tailed Ptarmigan, until (figuratively speaking) I gave up on them and began looking forward to walking in this rocky, wind-blasted terrain just for the pleasure of its exotic beauty—at which point I glanced down one day and a quietly chuckling flock was all around me. I followed miles of rocky streams looking for an American Dipper, until it dawned on me that simply sitting down on a comfortable streamside rock and waiting for one to fly by might be the best way to look. It worked the first time, and it has every visit since.

A regular schedule evolved on my park visits: after the day's hike, I'd be back at the cabin by midafternoon. A rest on the deck, maybe a quick trip into town, a beverage or two . . . and then, as the day wound down, an easy walk—just a stroll, really—right around the cabin, from which trails ran along a tiny brook into the park's eastern edge. Not birding, not hiking, not doing anything except simply exulting quietly in the crisp air, the smell of conifers, the sound of a raven overhead, the aspen leaves and harebells and willow thickets along a trail that, as time passed, I had walked dozens of times. If I made it to the deep woods on the ridge, fine; if I didn't, so what?

Once, on one of these end-of-the-day jaunts, a coyote appeared in a clearing across the brook. Because I was walking so slowly and silently, I was able to watch it awhile before it noticed me or felt my stare. It looked back with alert ears and level gaze and loped off, in a little more hurry than I to get somewhere. Another time, a scolding pack of Pygmy Nuthatches and Mountain Chickadees led me to a small tree where a Northern Pygmy-Owl sat, with that above-it-all attitude owls attempt but eventually abandon when they're trying to ignore harassment by their inferiors. And one late-afternoon walk brought me face-to-face with a Blue Grouse on a path not 100 yards from the cabin, only a quarter-mile or so from a highway on the outskirts of Estes Park. Tame as its reputation, it let me approach practically within touching range and stayed put while I ran back to get a companion so she could see it. This was a bird I'd looked for on all my previous trips, scouring the woods on paths miles from trailheads, following up the vaguest clues about where it might be found. Was somebody trying to tell me something?

Eventually it dawned on me that I was looking forward to these evening strolls as much as any other part of my Colorado trips. And it followed, as surely as sore feet follow a 12-mile hike, that I realized I could indulge in this kind of relaxed wandering, aimless if not pointless, any damn time I wanted to, not just after earning the right by making it to a mountaintop or a lake in a glacial cirque 1,000 feet above the tree line. More to the birding point, some of the park's nicest species are the sort that you simply stumble upon, rather than track down. You could spend days looking for a Pine Grosbeak or a Northern Goshawk and not find one if your life depended on it. So forget the goal. Enjoy the journey.

In recent years, my job has taken me to some odd locales around the world, where more often than not I arrive with an agenda of places that must be visited, people who must be seen, events that must be attended. I wake up every morning with a list in my head, and I do my best to do my duty to the people who are paying my way. But at the end of the day, when I've made my rounds and taken a certain number of notes, I don't feel too guilty about going for a stroll along a side street or lonely trail, just to walk through a woodsy park, or see how the sunset changes a mountain view, or for no reason at all. Even though I consider myself off duty on these evening walks, some of my most productive ideas have come to me then, while I was going nowhere, thinking of absolutely nothing—an insight or connection that popped into my head unsought-after, as unexpected as a pygmy-owl in a ponderosa pine. And, funnily enough, that's just the analogy that occurred to me the first time it happened.

The slow but irresistible force of experience, gained in the last soft light of Colorado fall evenings, has taught me this: although energy has its rewards, I don't really have to work so hard all the time, at birding or work. Sometimes a thought will appear, if you just stop thinking so hard. Sometimes the greatest rewards arrive after you've stopped trying to earn them. Sometimes the dipper will come to you, if you just sit still. ■

Representation 1998

Drakenberg, New York
Presents
~ THE WARBLER SERIES ~
by Anthony Henneberg
A SET OF EIGHT BONE CHINA DINNER PLATES
DEPICTING NORTH AMERICAN WOOD WARBLERS
Limited to 600 numbered sets

SPECIES INCLUDE:
Blackburnian
Black-throated Blue
Black-throated Green
Ovenbird
Yellow-throated
Golden-winged
Cape May
Chestnut-sided

For a free brochure contact:
Drakenberg, New York; P.O. Box 669, Pine Plains, NY 12567
Tel: 518-398-9682

Special Offer!

The Birds of North America

A limited number of charter subscriptions to *The Birds of North America* are still available to members of the Cornell Lab of Ornithology (see *Living Bird*, Spring 1998). While the offer lasts, Lab members can purchase the entire 18-volume set (all 720 species accounts) for the historically low price of $1,690, a savings of $560 off the current subscription price.

Don't miss this special opportunity. For more information, contact Pat Warner, The Birds of North America, 1900 Benjamin Franklin Parkway, Philadelphia, PA 19103; (215) 567-1170; e-mail: warner@birdsofna.org; web site: http://www.birdsofna.org.

The Birds of North America, No. 10, 1992

DAVID F. PARMELEE

Snowy Owl

The Birds of North America

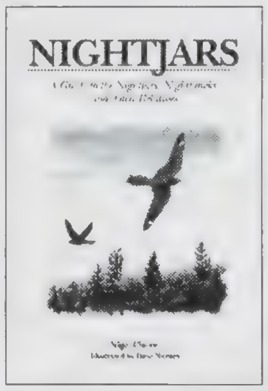
Life Histories for the 21st Century

Figure 1.

Order STRIGIFORMES Family STRIGIDAE

Where do you travel to watch birds?

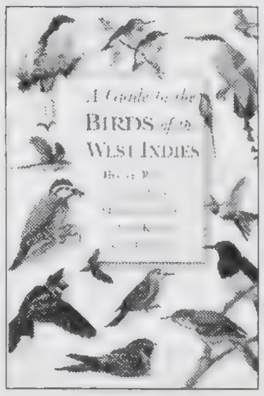
Nightjars: A Guide to the Nightjars, Nighthawks, & Their Relatives
Nigel Cleere



The Order Caprimulgiformes has confounded all birders, especially if identification rests on visual characteristics alone. The 36 full color plates in this latest addition to the Helm Series amply illustrate the subtle plumage and flight characteristic differences between the species. All 119 species in this Order are illustrated. Detailed range maps and voluminous species accounts follow the plates. Large Bibliography included.

Item #1015, ABA Sales Price $40.00

A Guide to the Birds of the West Indies
Herbert Raffaele, James Wiley, Orlando Garrido, Allan Keith and Janis Raffaele



This is a comprehensive field guide to all 564 species of the West Indies, including migrants. 86 color plates include 12 plates depicting individual endemics from various islands, and 7 plates featuring the island endemics of Cuba, Hispaniola, Jamaica and Puerto Rico. Range maps, detailed information on identification, local names, status, habitat, voice, and nesting are given for each species.

Item #1028, ABA Sales Price, $45.00

***A Sound Guide to Nightjars and Related Nightbirds* (CD)**
Richard Ranft
Intended as an adjunct to the Helm Series edition on Nightjars, this CD is also a stand-alone product which will enable birders to identify 108 (of the 119) species of Caprimulgiformes.
Item #1015CD, ABA Sales Price $20.00

Call for a free Birder's Catalog today!

ABA Sales

Specializing in books, optics, and accessories for birders.
PO Box 6599, Colorado Springs, CO 80934
Phone: 800/533-2473

BG WILDLIFE PHOTOGRAPHER OF THE YEAR

BY TIM GALLAGHER

A portfolio of winning and commended bird images from the world's premier nature photography competition

I knew the minute I walked into the great gallery of London's Natural History Museum that I was in for an amazing evening. The place looked like some strange cavern in a fairy tale. Above the carefully laid tables loomed the massive skeleton of a plant-eating dinosaur, vaguely threatening in the semidarkness. Lush velvet drapery, strung with cheerily twinkling lights, hung from the high ceiling at either end of the hall. Bubbling blue lava lamps glowed eerily on the tabletops. And a mammoth banner, depicting a Silver Gull with its bill agape, proclaimed "BG Wildlife Photographer of the Year, 1998."

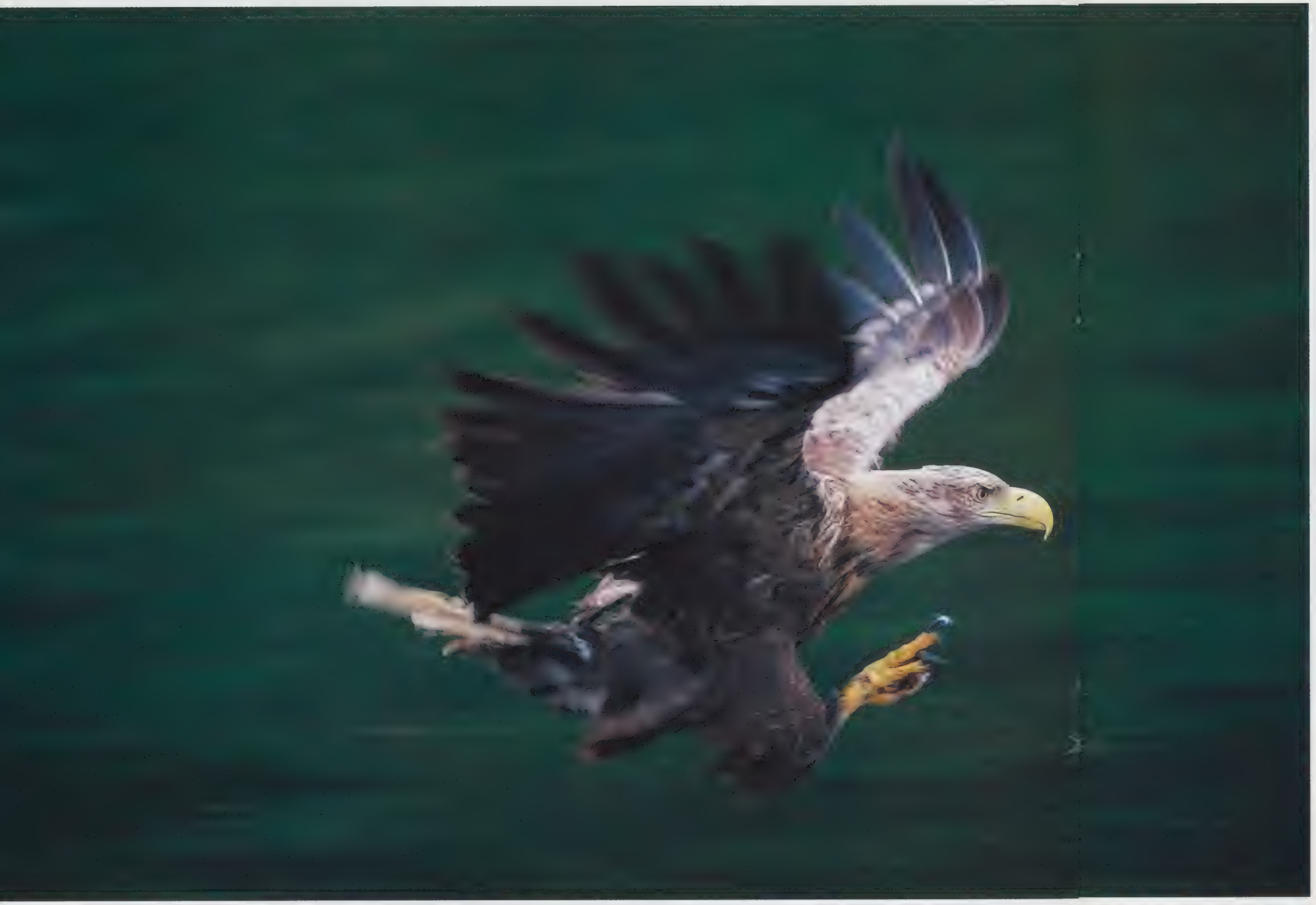
More than 250 people, from countries throughout the world, attended the BG Wildlife Photographer of the Year awards banquet this past October 22. Many of the photographers with winning and commended images in the competition were there, along with various dignitaries and celebrities—most notable of whom was Sir David Attenborough, famed producer and host of television nature programs (such as his latest effort, "The Life of Birds"), who presented the awards. It was an amazing assemblage of people, all brought together by a common interest in nature photography as an art form.

From the time it began, 15 years ago, this competition has attracted entries from around the world. This year alone, more than 20,000 images were judged, submitted by photographers in 60 countries. The competition has been organized from the beginning by The Natural History Museum, in London, and *BBC Wildlife* magazine and, for the past nine years, has been sponsored by British Gas (hence the "BG" in the title). The aim of the competition, according to its organizers, is "to bring

KARI REPONEN (Finland)
Winner: Animal Behavior: Birds
Goshawks courtship feeding

"It was a very cold March morning in Anttola, southeast Finland. The male [Northern] goshawk was giving the prey, a [Eurasian] jay, to the female, and they were calling loudly. The atmosphere of the picture is unique, with the strong morning light being reflected off the snow and illuminating the birds from below."

(Nikon F4 with 300mm lens; 1/500th of a second; Fujichrome Velvia)



the widest audience the very best wildlife photographs, and through them to emphasize the beauty, wonder, and importance of the natural world."

Of the enormous number of entries, a winner and a runner-up are chosen in each of 12 adult categories. If the competition is particularly close for the top two spots in a category, a special commendation (third place) may be awarded. In addition, a number of highly commended images from each of the categories are also included in the exhibition.

The winning and commended images in the competition are included in a book that's distributed worldwide and in an exhibition at The Natural History Museum. In addition, four sets of the exhibition will tour the United Kingdom, visiting 35 different galleries, museums, and nature centers. And an international tour will go on display in Australia, France, Germany, Holland, Japan, the United States, and several other countries.

This year I had the wonderful experience of having one of my images (the Pacific Loon at right) receive a special commendation in the category "Animal Behavior: Birds." Because I'm originally from Britain, it was doubly gratifying to receive this commendation and see my photograph displayed in London at the museum.

We're pleased to present this portfolio of some of the bird images chosen in this year's competition. But this is just a small sampling. Keep an eye out for notices of the traveling exhibition coming to a museum or other venue near you. It's an impressive collection of images. For more information, contact BG Wildlife Photographer of the Year Competition, The Natural History Museum, Cromwell Road, London SW7 5BD, United Kingdom. ■

LAURIE CAMPBELL (United Kingdom)
Runner-up: British Wildlife
White-tailed Eagle fishing

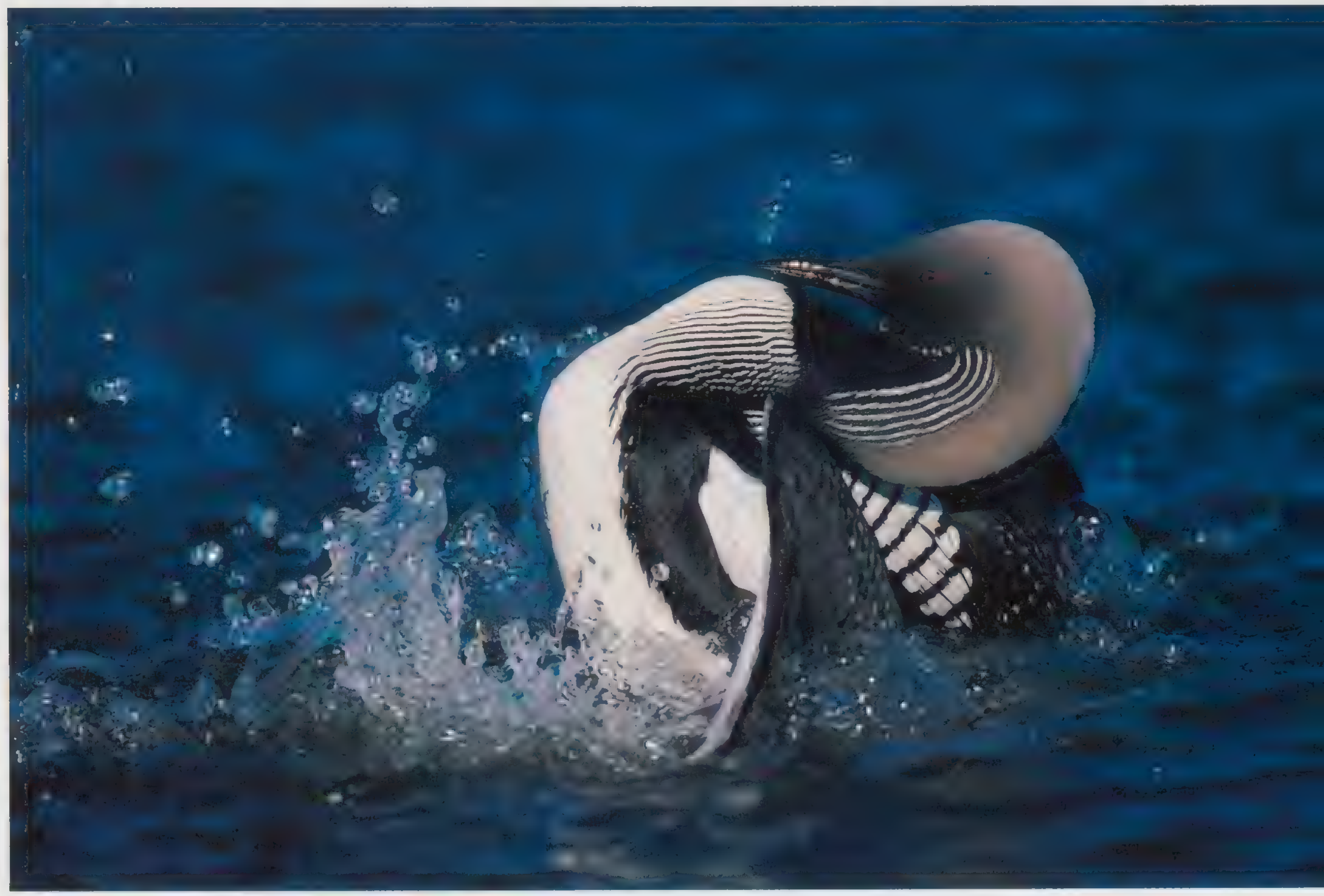
"I photographed this [White-tailed] eagle fishing in July 1997, off the west coast of Scotland. I was working on a contract for the Scottish Natural Heritage to illustrate the reintroduction of this species from Scandinavia, and there were only 12 pairs nesting in Scotland."

(Nikon F5 with 500mm lens; 1/250th of a second at f/4; Fujichrome Provia 100 rated at 200 ISO)

TIMOTHY GALLAGHER (United Kingdom)
Specially Commended: Animal Behavior: Birds
Pacific Loon displaying

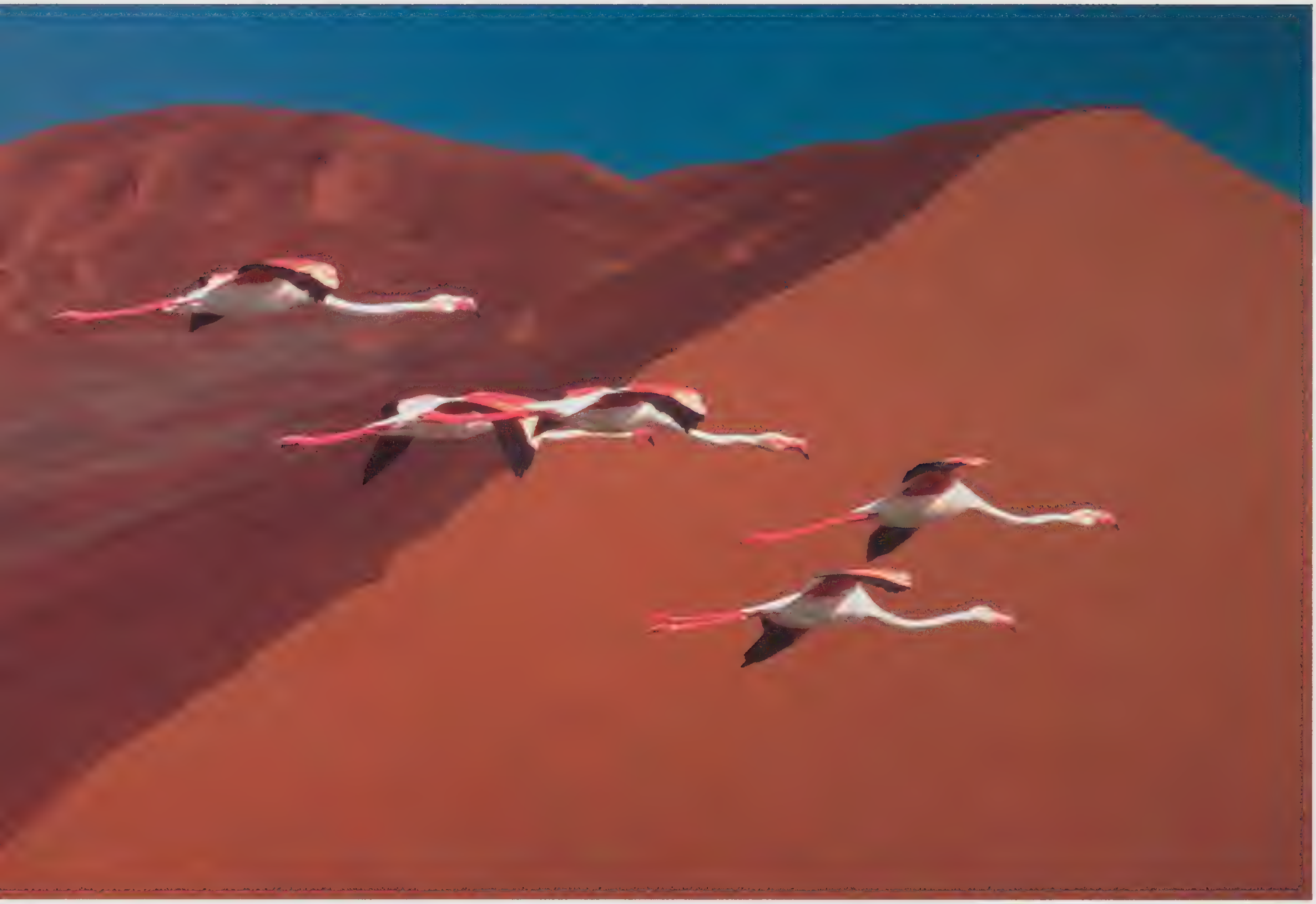
"I photographed this Pacific Loon in northern Manitoba, near Hudson Bay. The bird suddenly plunged into the pond and began splashing its wings and rearing up in the water. The rich, bright light from the low morning sun enhanced the color of the plumage. As I took the picture, I thought it looked like an oriental painting."

(Nikon F4 with 500mm lens; 1/1,500th of a second at f/4; Fujichrome Sensia 100)



BHL

Blank Page Digitally Inserted



MARCELLO CALANDRINI (Italy)
Highly Commended: Animal Behavior: Birds
Flamingos flying over sand dunes

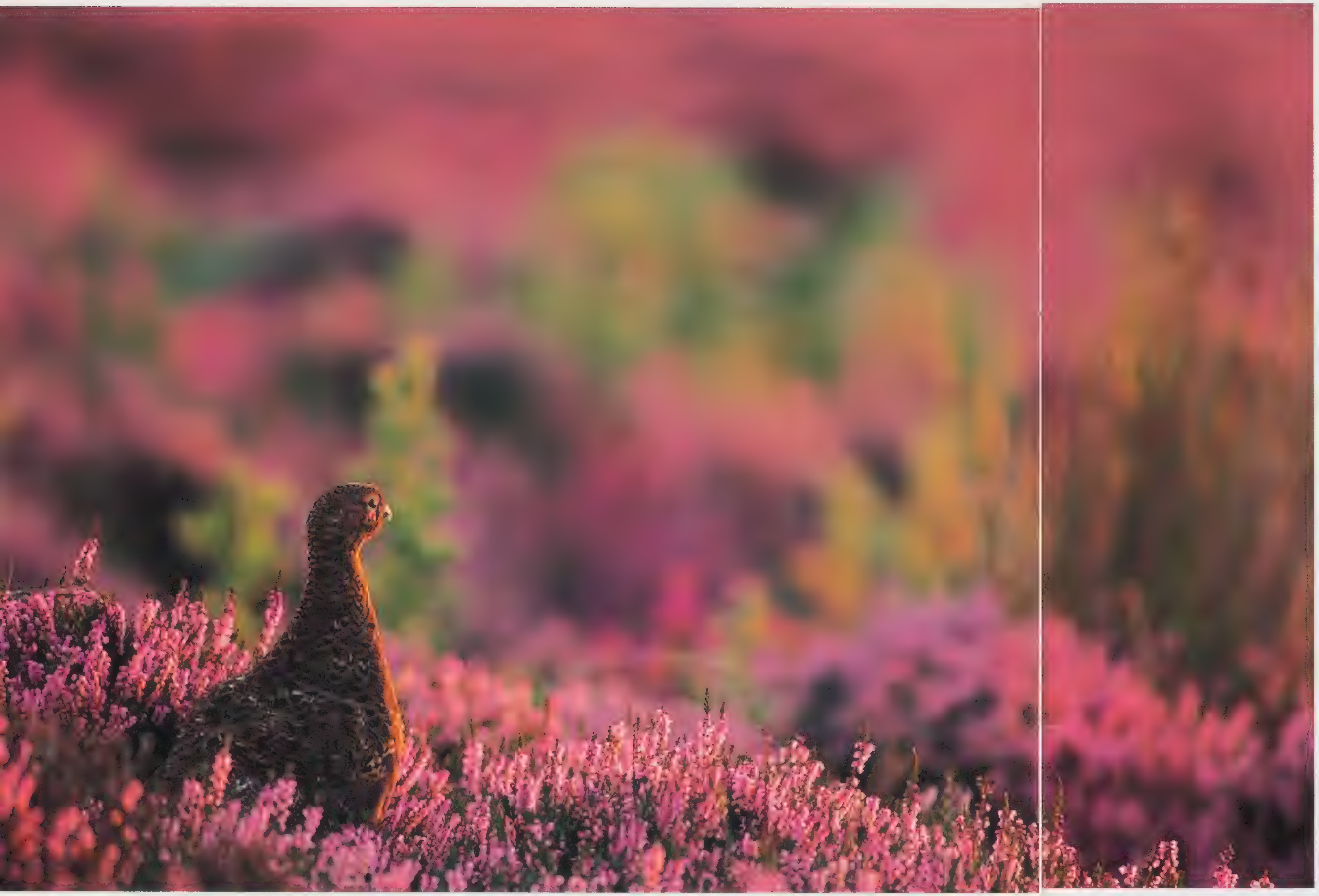
"I was photographing the dunes in the Namib Desert when I saw a small group of Greater Flamingos flying quite close to my car. I used a telezoom lens and managed to take just five shots; only one was perfect."

(Canon EOS 1N with 80-200mm zoom lens; 1/350th of a second at f/11; Fujichrome Sensia 100)

PAOLO CORTESI (Italy)
Highly Commended: Urban and Garden Wildlife
Dove on statue

"This Eurasian Collared-Dove had deserted her nest on the war memorial in my home town of Bologna because of the annual fair. A few days later she returned to the arms of the soldier, and I took this picture. But a week later restoration work started on the memorial, and she left for good."

(Pentax Z1P with 300mm lens; 1/125th of a second at f/8; Fujichrome Velvia)



ROY GLEN (United Kingdom)
Winner: British Wildlife
Red Grouse in heather

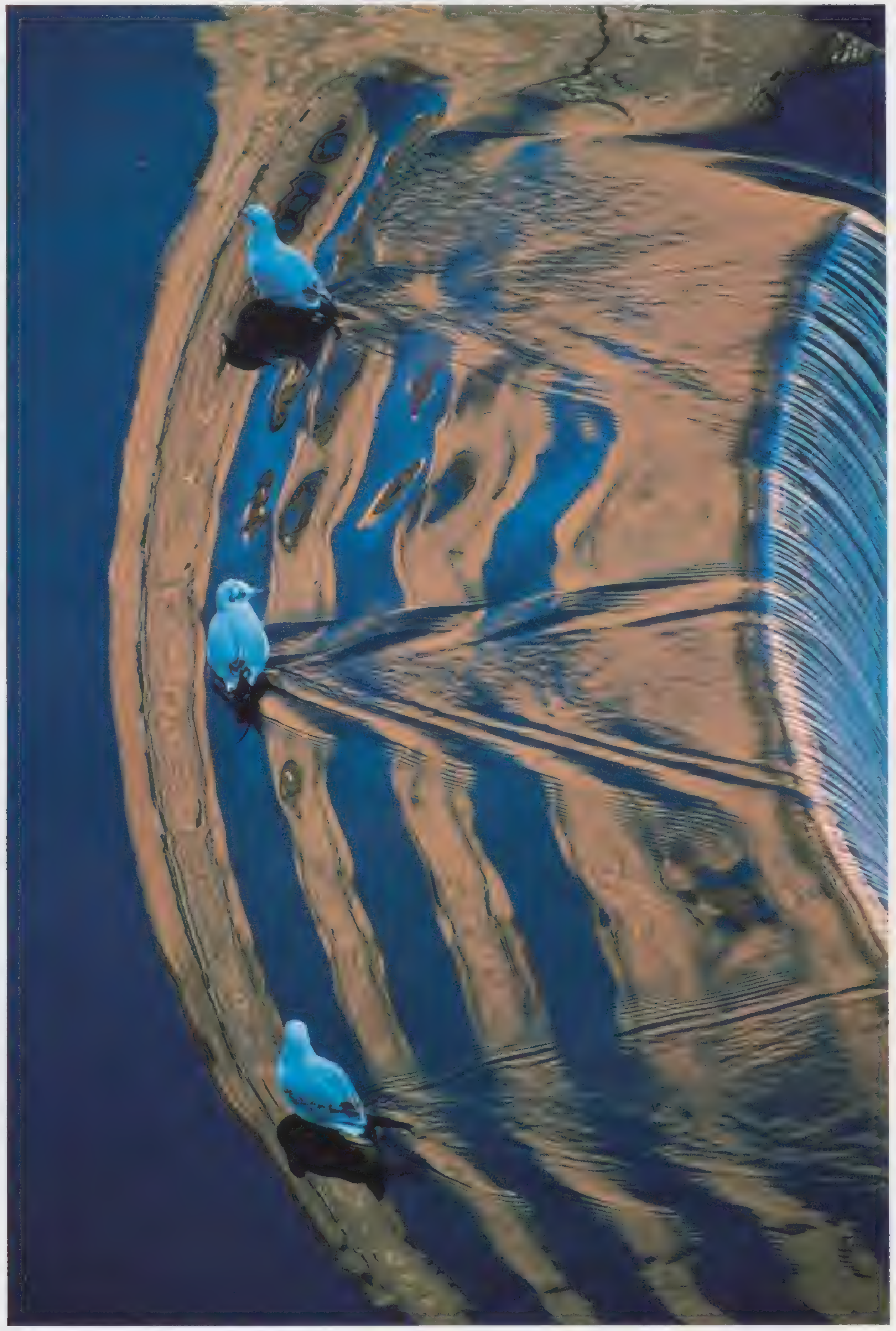
"It was sunrise on the North Yorkshire Moors in August, and the heather was in flower, covering the ground with a deep pink carpet. In places the grouse are accustomed to roadside vehicles, so I was able to maneuver quite close to this bird."

(Nikon F4E with 500mm lens; beanbag; 1/60th of a second at f/4; Fujichrome Velvia)

RAOUL SLATER (Australia)
Winner: Urban and Garden Wildlife
Black-headed Gulls on weir

"The famous stone Pulteney Bridge in Bath had caught the late autumn sunshine and reflected golden light onto the elegant weir below. These Black-headed Gulls braved cold feet and stood on top of the weir, creating a wonderful pattern."

(Canon EOS A2 with 75-300mm lens; 1/30th of a second at f/5.6; Fujichrome Velvia)



BHL

Blank Page Digitally Inserted

Ruby-throated Hummingbirds

BIRDING IN AMERICA . . .

in the 18th century

BY MARCIA BONTA

Long before John James Audubon brought the birds of this continent to the world, Finnish naturalist Peter Kalm wrote of America's avian treasures

Peter Kalm didn't always get it right. Ruby-throated Hummingbirds don't "subsist only upon the nectar of sweet juice of flowers," nor do they "always build [their] nest in the middle of a branch." But they certainly do "like those [flowers] most which have a long tube . . . and flutter chiefly about the *Impatiens noli tangere* [jewelweeds] and the *Monarda* [beebalm] with crimson flowers." Their nests are lined with "quite soft down" and have a "coating of green moss [lichens]" and they "lay two eggs, each of the size of a pea."

Kalm continued to describe accurately the beauty, migratory calendar, boldness, and feisty spirit of hummingbirds. "When several of them were on the same bed, there was always a violent combat between them . . . when they fly against each other in the air, they make a chirping noise like a sparrow or chicken."

Furthermore, "an inhabitant of the country is sure to have a number of these beautiful and agreeable birds before his window all the summer long, if he takes care to plant a bed with all sorts of fine flowers under them." Hummingbird gardens, it would seem, were already popular when Peter Kalm wrote about his

Kalm greatly admired the Native Americans and described the Eden that had once been here. They "seldom disturbed the birds" but "since the arrival of great crowds of Europeans, things are greatly changed, the country is well peopled, and the woods are cut down."

visit to southern New Jersey and the Philadelphia area from 1748 to 1751 in his book, *Travels in North America.*

Known principally as a botanist with a practical interest in medicinal herbs and agricultural plants, Kalm was a protégé of Swedish naturalist and taxonomist Carolus Linnaeus and accompanied the great man on a scientific collecting trip to Russia and the Ukraine in 1744. Four years later, at age 32, Kalm embarked for America in search of useful plants that might tolerate Sweden's climate, especially the red mulberry, with which entrepreneurs hoped to launch a silk industry in the country. He was financed by Uppsala and Abo universities and private industry, and he carried letters of recommendation not only from Linnaeus, but from English merchant Peter Collinson, whose interest in American plants made him the patron of Philadelphia naturalist and plant collector John Bartram, and John Mitchell, an English-born botanist who spent much of his life in America.

Those letters gave Kalm instant access to Philadelphia's most prominent citizen, Benjamin Franklin, his host and counselor whenever he was in the city, and John Bartram. Bartram lived four miles from Philadelphia, along the Schuylkill River and had, Kalm wrote, "a great knowledge of natural philosophy and history," all learned on his own. Bartram even taught himself Latin so that he could understand botanical terms. "I owe him much, for he possessed that great quality of communicating everything he knew," Kalm acknowledged gratefully.

Passenger Pigeon

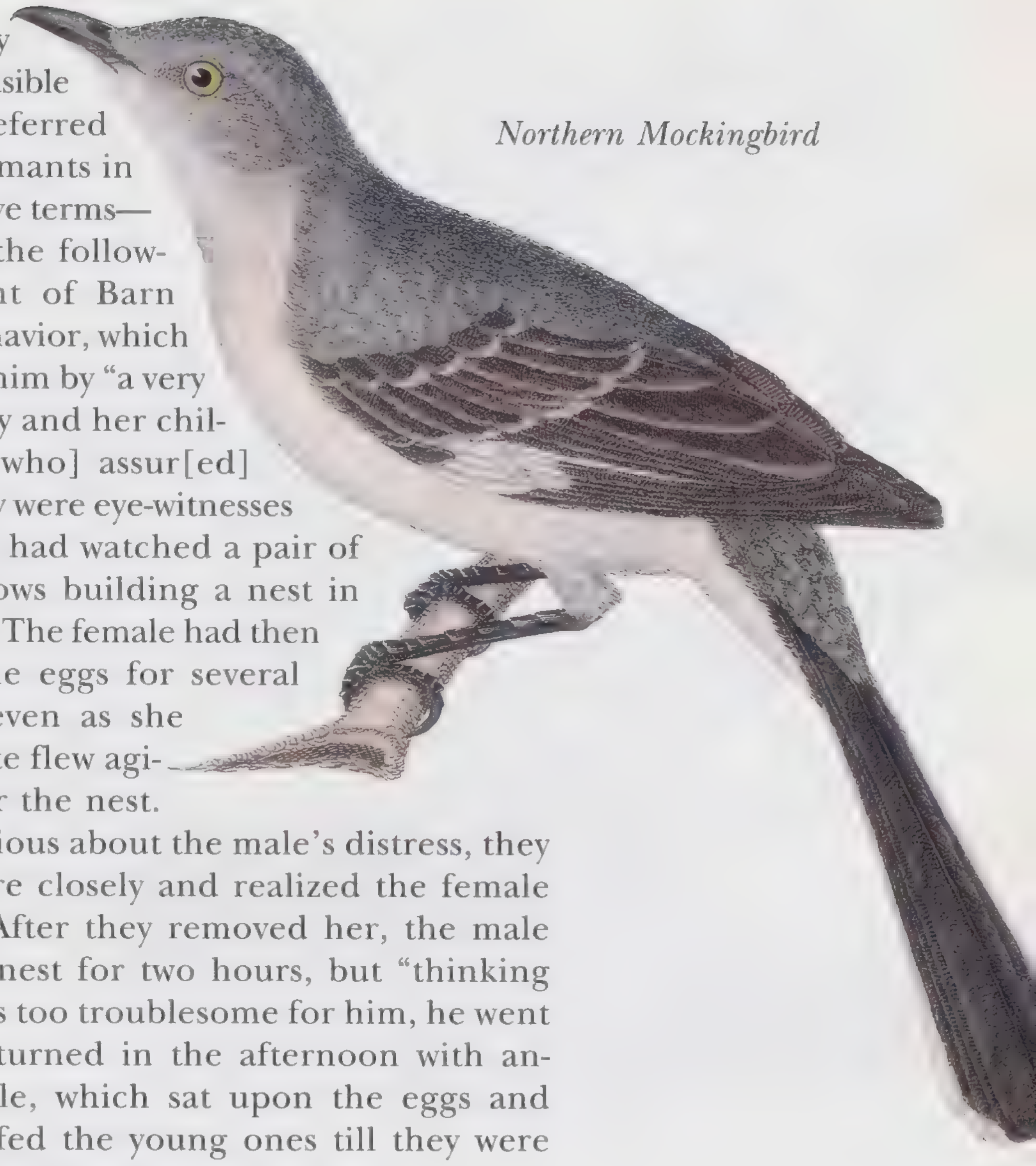
Kalm, who was orphaned the year he was born (1716), was a native of Finland, which was then part of Sweden. He attended Finland's Abo Academy. A bishop interested in nature encouraged Kalm to specialize in the natural sciences and even secured him a patron, Baron Sten Carl Bjelke. The baron paid Kalm's expenses on his scientific travels through Finland and Sweden.

After Abo Academy, Kalm attended Sweden's Uppsala University, where he became Linnaeus's student. He was elected to the Swedish Academy of Sciences in 1745. Two years later he became a professor of agriculture at Abo, but he took a leave of absence the following year to travel to America. So grateful was Linnaeus for the 90 new plants Kalm brought from America that he named a genus for him: *Kalmia,* as in *latifolia* (mountain laurel), *angustifolia* (sheep laurel), and *polifolia* (pale laurel).

On his journey in North America, Kalm interviewed many old Swedes who had lived in Raccoon (now Swedesboro, New Jersey) since the middle of the 17th century. "All the old Swedes and Englishmen born in America whom I ever questioned asserted that there were not nearly so many edible birds at present as there used to be when they were children," wrote Kalm. "In their youth the bays, rivers and brooks were quite covered with all sorts of waterfowl, such as wild geese, ducks, and the like. But at present there was sometimes not a single bird upon them."

One settler told him he had killed 23 ducks in one shot as a boy. Wild Turkeys and partridges (Ruffed Grouse) were similarly slaughtered so that by the time of Kalm's visit "a person gets tired with walking before he can start a single bird. . . . In spring the people still steal eggs, mothers, and young indifferently, because no regulations are made to the contrary." And, Kalm added, "if any had been made, the spirit of freedom which prevails in the country will not suffer them to be obeyed." Seemingly unable to recognize their own culpability, people complained bitterly to Kalm throughout his visit about the loss of edible birds.

Kalm greatly admired the Native Americans and described the Eden that had been here before the



Northern Mockingbird

arrival of the Europeans. They "seldom disturbed the birds" but "since the arrival of great crowds of Europeans, things are greatly changed, the country is well peopled, and the woods are cut down . . . hunting and shooting in part extirpated the birds, in part frightened them away."

Not all the birds were immediately killed for the table. Ruffed Grouse, Canada Geese, Passenger Pigeons, and Wild Turkeys were often caught and tamed, their wings were clipped, and they were added to the domestic barnyard poultry flock. Kalm, who freely enjoyed the gustatory delights of our native birds, declared that the Passenger Pigeon had "the most palatable of any bird's flesh I have ever tasted."

Several songbirds were prized as cage birds. Mockingbirds, Northern Cardinals, and American Robins were special favorites. Kalm, himself, kept a male cardinal in a cage for five months. His male apparently was content, but he said that many captive songbirds "die with grief on being put into cages." Those that were tamed, though, sang so sweetly that they were sent to London in cages and sold.

The mockingbird was considered the best singer. "The song peculiar to them is excellent, and varied by an infinite change of notes and melody." People caged them, even though the young ones often died in captivity. Kalm speculated that they died because they could not adjust to the food people gave them. But other people had a different explanation for their deaths. They told Kalm that wild mockingbird mothers always fed their youngsters through the bars of the cage for three or four days before finally giving up and flying away, and the young would die soon after. "It is generally imagined that the last time the mother feeds them, she finds means to poison them in order the sooner to deliver them from slavery and wretchedness," he wrote.

Because of such anthropomorphic stories, critics of Kalm's work thought him too credulous, but Kalm frequently qualified what seemed to be tall tales about wild creatures by prefacing them with "the people said," so that readers would realize that he did not believe such stories himself but was merely reporting what he had been told. On the other hand, when a story seemed plausible to him he referred to his informants in more positive terms—such as in the following account of Barn Swallow behavior, which was told to him by "a very reliable lady and her children . . . [who] assur[ed] me that they were eye-witnesses to it." They had watched a pair of Barn Swallows building a nest in their stable. The female had then brooded the eggs for several days. But even as she sat, her mate flew agitatedly near the nest. Finally, curious about the male's distress, they looked more closely and realized the female was dead. After they removed her, the male sat on the nest for two hours, but "thinking the business too troublesome for him, he went out and returned in the afternoon with another female, which sat upon the eggs and afterwards fed the young ones till they were able to provide for themselves."

In both the mockingbird and the swallow stories, birds were bestowed with humanlike reasoning powers. Such tales, though, were the exception in Kalm's usually straightforward descriptions of bird behavior. For example, he carefully recorded the date the Barn Swallows returned (April 10, 1750) and the places where they built their nests—in houses and under roofs but also on the undersides of overhanging rocks. "This shows," he concluded, "where the swallows built their nests before the Europeans settled and built houses there." He also speculated about where they spent their winters, mentioning that some settlers thought that the birds lay at the bottom of the sea and others that they migrated south in autumn and returned in spring. But people in Albany, New York, told him they had found them sleeping in deep holes and clefts in the rocks.

Like other naturalists

The title page of the Dutch translation of Peter Kalm's Travels in America.

Barn Swallow

of his time, Kalm placed both swallows and swifts in the family *Hirundinidae.* In addition to Barn Swallows, he discussed chimney swallows (Chimney Swifts), ground swallows or sand martins (Bank Swallows), and Purple Martins. Chimney swallows appeared early in May, later than all the other swallows, he correctly noted, and they built their nests only in chimneys. But before the Europeans and their chimneys, Kalm thought they had lived in "great hollow trees." Ground swallows were "seen everywhere in America, they make their nests in the ground on the steep shores of rivers and lakes."

Purple Martins were very popular with the settlers, who built "little bird houses made of boards and attached to the outside of the walls" to induce them to stay. "They drive away both hawks and crows as soon as they see them, and by their anxious note alarm the poultry of the approach of their enemies." For those same reasons, Native Americans had kept their own martin houses for centuries before the settlers arrived, so the European settlers probably derived their beliefs about the helpfulness of Purple Martins from them.

Native Americans also figured in a legend about Whip-poor-wills that Kalm repeated based on naturalist Mark Catesby's work. "Mr. Catesby says the Indians affirm that they never saw these birds, or heard them, before a certain great battle in which the Europeans killed a great number of Indians. Therefore they suppose that these birds, which are restless and utter their plaintive note at night, are the souls of their ancestors who died in battle."

"The Indians affirm that they never saw [Whip-poor-wills], or heard them, before a certain great battle in which the Europeans killed a great number of Indians. Therefore they suppose that these birds, which are restless and utter their plaintive note at night, are the souls of their ancestors who died in battle."

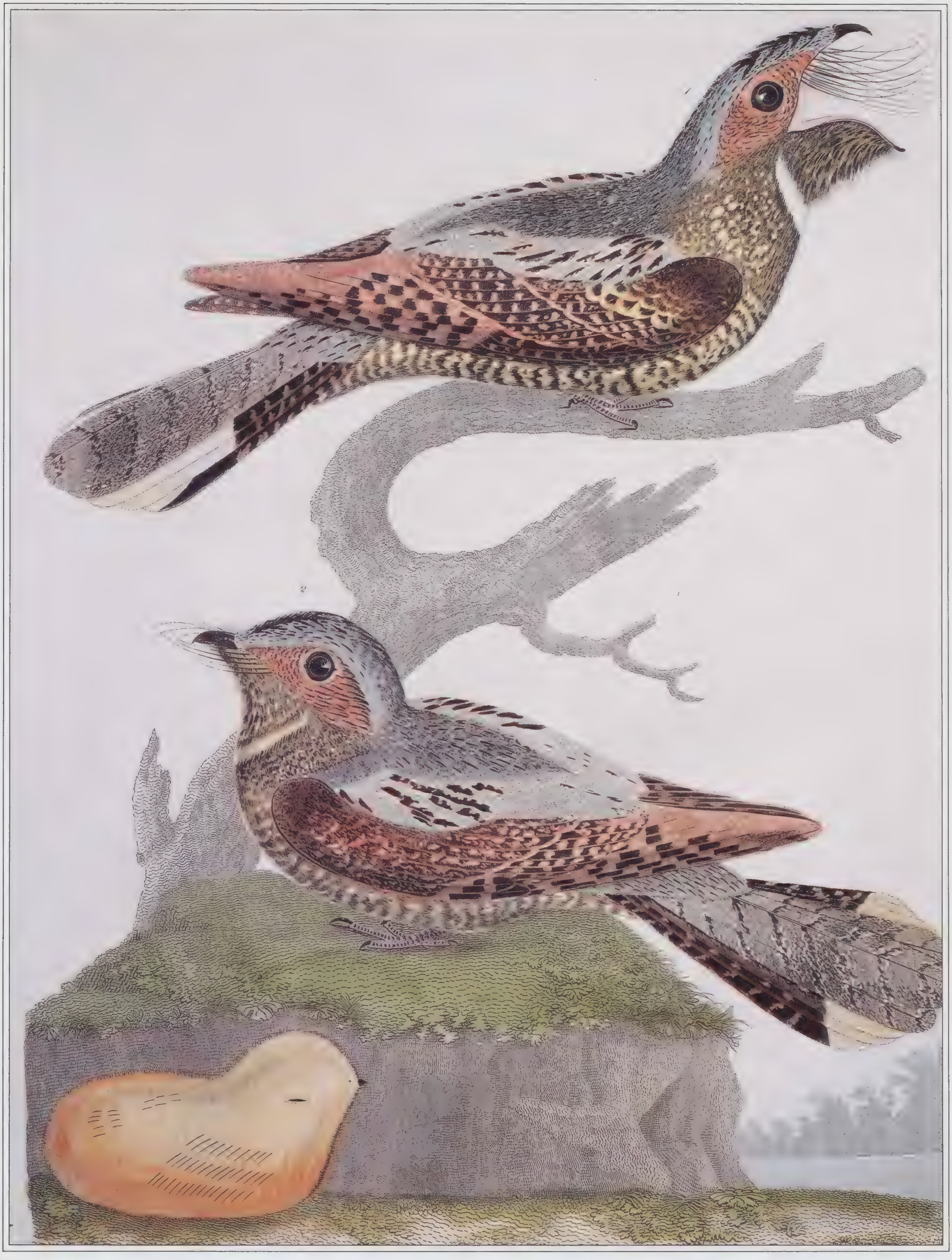
Such legends aside, Kalm (and Linnaeus) correctly classified Whip-poor-wills as goatsuckers. Kalm mentioned their migratory habits and their nightly ritual of beginning to call after sunset and moving from place to place as they did so. He discovered that they like the back steps of people's houses for singing and catching insects. "When it sits calling its 'whipperiwhip' and sees an insect passing, it flies up and catches it, and settles commonly on the ground or very low bushes or on the lower rails of fences. They always fly near the ground; they continue their calling at night till it grows dark. They are silent till the dawn of day comes on, and then they call till the sun rises."

The Swedish settlers who named them "whipperiwills" and the English "whippoorwills" ate them with relish so that although "sometimes you hear four or five or more near each other, calling as if it were for a wager, and raising a great noise in the woods . . . they are seldom heard in towns, being either extirpated there or frightened away by frequent shooting."

This early war on edible birds extended to those judged pestiferous, such as Common Grackles, Red-winged Blackbirds, American Crows, and even woodpeckers. The Red-headed Woodpecker was "destructive to corn fields and orchards," some years eating all of the sweet apples, so a bounty of twopence per head was put on them "in order to extirpate this pernicious bird, but this law has been repealed." Yellow-bellied woodpeckers (Sapsuckers) were "much more numerous than many people like" because they also harmed apple trees. Similarly, least spotted (Downy) woodpeckers were the "most dangerous to orchards" because of their daring and abundance, pecking so many holes into apple trees that they died. So, too, did the "spotted, hairy, middle-sized" (Hairy) woodpeckers. The crested (Pileated) woodpeckers, which Kalm frequently saw in Pennsylvania forests, even in winter, were considered "corn destroyers . . . for by picking holes in the membrane round the ear, the rain gets into it and causes the ear with all the corn it contains to rot."

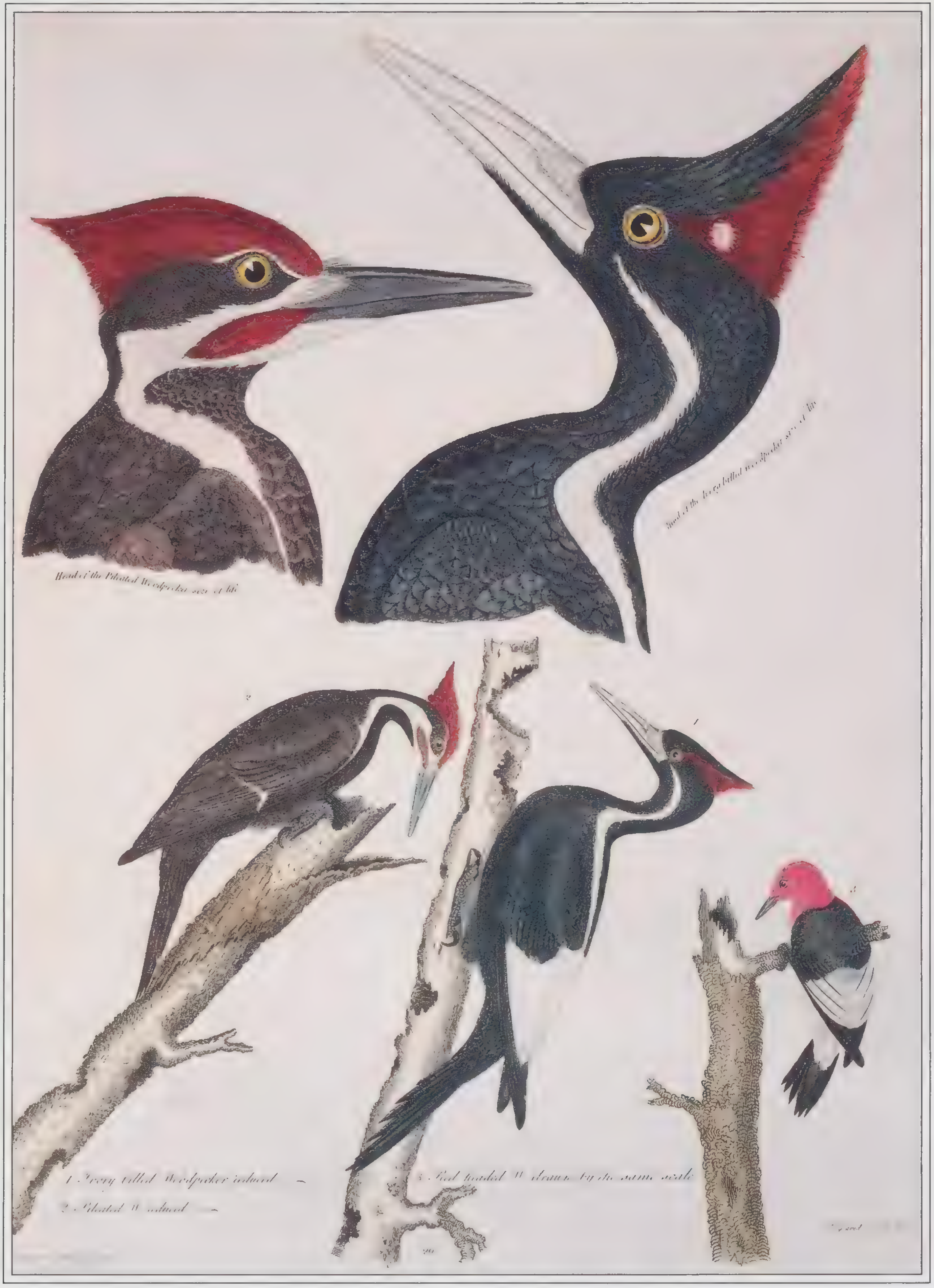
In his short treatise on the woodpeckers of America, Kalm said that the "king of the woodpeckers [the Ivory-billed] is found here, though very seldom, and only at a certain season." Golden-winged woodpeckers (Northern Flickers) spent most of the time on the ground eating insects, according to Kalm, and did not bother either the trees or the corn crop. But because they were "very fat" and "very palatable," they were choice food items on the settlers' menu.

American Crows and Common Grackles were "corn thieves" that ate corn seeds after they were planted and the ears themselves when they were ripe. Crows were so harmful to the



Whip-poor-wills

Pileated, Ivory-billed, and Red-headed woodpeckers


Head of the Pileated Woodpecker size of life
Head of the Ivory billed Woodpecker size of life
1 Ivory billed Woodpecker reduced
2 Pileated W. reduced
3 Red headed W. drawn by the same scale

In his short treatise on the woodpeckers of America, Kalm said that the "king of the woodpeckers [the Ivory-billed] is found here, though very seldom, and only at a certain season."

crop that "the government of Pennsylvania gave threepence, and that of New Jersey fourpence, premium for every head of a crow; but this law has now been repealed, as the expenses became too great."

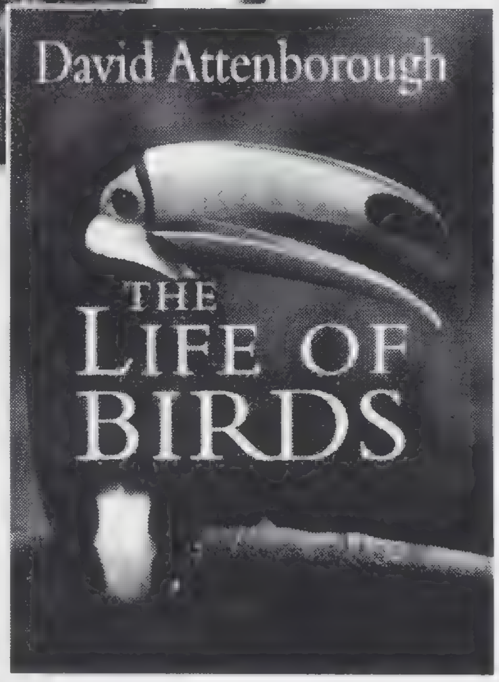
Common Grackles migrated from the South in huge flocks in springtime, just after the corn was planted. "They snatch up the kernels of corn and eat them. As soon as the leaf comes up, they take hold of it with their bills, and pull it up, together with the corn or grain." To stop that behavior, settlers learned to soak their seeds in a decoction of white hellebore root before planting them. Kalm claimed that "when the corn thief eats a grain or two . . . his head is made dizzy and he falls down; this frightens his companions, and they dare not venture to the place again."

But in autumn, the grackles wreaked their vengeance, assembling by the thousands in the corn fields: "when they rise in the air they darken the sky." In New Jersey and Pennsylvania the bounty on them was threepence a dozen, and in New England they were almost extirpated. Then, in 1749, worms infested the New England corn crop and "the people repented of their enmity against the corn thieves for they had observed that those birds lived chiefly on such worms before the corn was ripe and consequently exterminated them, or a least prevented their increasing too much."

Not all birds were hunted for food or killed because they ate the settlers' food. But there is no doubt that our forefathers were intensely utilitarian as well as wasteful in their attitude toward birds. Still, reading some of Kalm's accounts of birds, especially his enthusiastic description of one of America's favorite yard birds, the Ruby-throated Hummingbird—"the most admirable of all the rare birds of North America"—and the settlers' attempts to attract them to their gardens is to catch the first glimmer of the appreciation of birds for their own sakes. ■

Marcia Bonta is a freelance writer specializing in nature and outdoor subjects. Illustrations by Alexander Wilson, courtesy of the Division of Rare and Manuscript Collections, Karl A. Kroch Library, Cornell University.

Princeton Guides



David Attenborough

THE LIFE OF BIRDS

The Life of Birds

David Attenborough

Based on the spectacular ten-part program that will air on PBS, *The Life of Birds* is David Attenborough at his characteristic best: presenting the drama, beauty, and eccentricities of the natural world with unusual flair and intelligence. Beautifully illustrated with nearly 200 color photographs, the book will delight and inform all bird lovers.

Cloth $29.95 ISBN 0-691-01633-X

A Guide to the Birds of the West Indies

Herbert A. Raffaele

This is the first comprehensive field guide to the birds of the West Indies to appear in more than fifty years. It covers all 564 bird species known to occur in the region. Each species is represented by a full description. A distribution map accompanies each species account.

This important new book supersedes all other guides to the region.

86 color plates.

Cloth $45.00 ISBN 0-691-08736-9
(Prepublication price through 12/31/98)
Not available from Princeton in the U.K. and E.U.

The Handbook of Bird Identification for Europe and the Western Palearctic

Mark Beaman and Steve Madge

Drawing on their unrivaled field experience in Europe, the Middle East, and North Africa, authors Mark Beaman and Steve Madge have combined forces with some of Europe's finest bird artists to produce the region's most comprehensive bird guide ever. This is the first book to cover every species—nearly 900 in total. It is a landmark publication and an indispensable resource for all serious birders.

357 color plates. 625 color maps.

Cloth $85.00 ISBN 0-691-02726-9
(Prepublication price through 12/31/98)

Where to Watch Birds in Australasia and Oceania

Nigel Wheatley

The newest guidebook in Nigel Wheatley's series describes over 200 major sites in detail and many more in passing, from New Guinea to New Zealand and across the Pacific to Hawaii. Over 100 maps and 50 line drawings complement the text. This guide will prove invaluable in birding trips to any country, archipelago, or island in this highly varied region of the world.

100 maps. 50 line drawings.

Cloth $35.00 ISBN 0-691-00231-2

A Guide to the Birds and Mammals of Coastal Patagonia

Graham Harris

With a foreword by William Conway

Illustrations by the author

This is the first guidebook to the birds and mammals of the coastal region of Patagonia, a vast area at the southern tip of South America. It describes the 185 species of birds and 61 species of mammals known to inhabit the land and sea along 2000 miles of the Patagonian coast. Extensively illustrated by the author, this guide provides complete information on every species.

33 color plates. 28 line drawings. 243 maps.

Cloth $65.00 ISBN 0-691-05831-8

Princeton University Press

AT FINE BOOKSTORES OR CALL 800-777-4726 • HTTP: //PUP.PRINCETON.EDU

All bird illustrations from
A Guide to the Birds of the West Indies

LAST STAND *in the* ARKANSAS DELTA

BY JOHN J. GSCHWEND, JR.

Preserving the chain of the Red-cockaded Woodpecker's existence—one link at a time

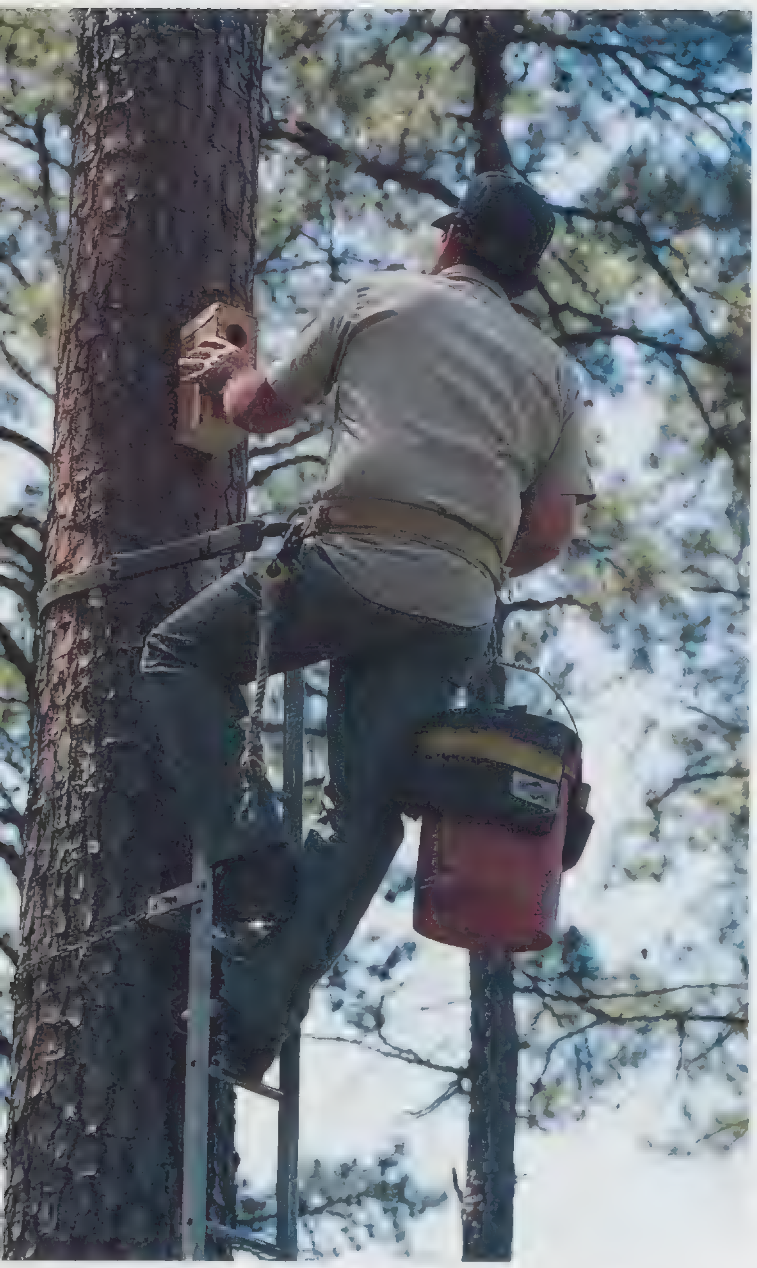
I was anxious to see the old loblolly pines—standing like ancient columns, white from years of sap flow. As I neared this special habitat, a small pine forest nicknamed the "Skinny 40," I grew more and more excited. Surely a few Red-cockaded Woodpeckers would still be there. I searched the towering trees with my binoculars and listened intently for the characteristic "rubber-duck" squeak of the species. But all I heard was the distant roar of a farm tractor. Scanning the cavities in the trees, it was sobering to realize that the sap flow had long been dry; it was no longer white but more yellowish-brown. Bill was right. All of the woodpeckers were gone.

The sound of the tractor gradually drifted away, and I stood there for a time. Without the Red-cockaded Woodpeckers, this place, which had once been so special, seemed like a ghost town. The wind slowly grew in intensity until the tops of the trees swayed, and the sound built gradually from a whisper into an eerie, mournful moan. It was fitting, I thought. I packed my gear and withdrew from the place just as I had found it—alone.

A vast forest of loblolly pines once stretched the length of Monroe County in the delta region of eastern Arkansas. This area sustained perhaps thousands of breeding Red-cockaded Woodpeckers. But now, only isolated pockets of this habitat remain—perhaps six or seven total—and most of them are heavily mixed with oaks and other hardwoods. The woodpeckers that remain are like

For nesting and foraging, Red-cockaded Woodpeckers require mature pines, usually at least 70 years old and infected with redheart—a fungus that softens the normally extremely hard heartwood of the trees.

JOHN & KAREN HOLLINGSWORTH



To provide more cavities for the birds, researchers insert custom-fitted boxes (above) into the trunks of pine trees, after cutting a hole with a chainsaw to accommodate them. A Red-cockaded Woodpecker (at right) visits a nest in an artificial cavity installed the year before. These birds need park-like conditions (far right) for their cavity tree clusters.

fish in a small pond that is slowly drying up, completely cut off, hundreds of miles from the rest of their endangered population.

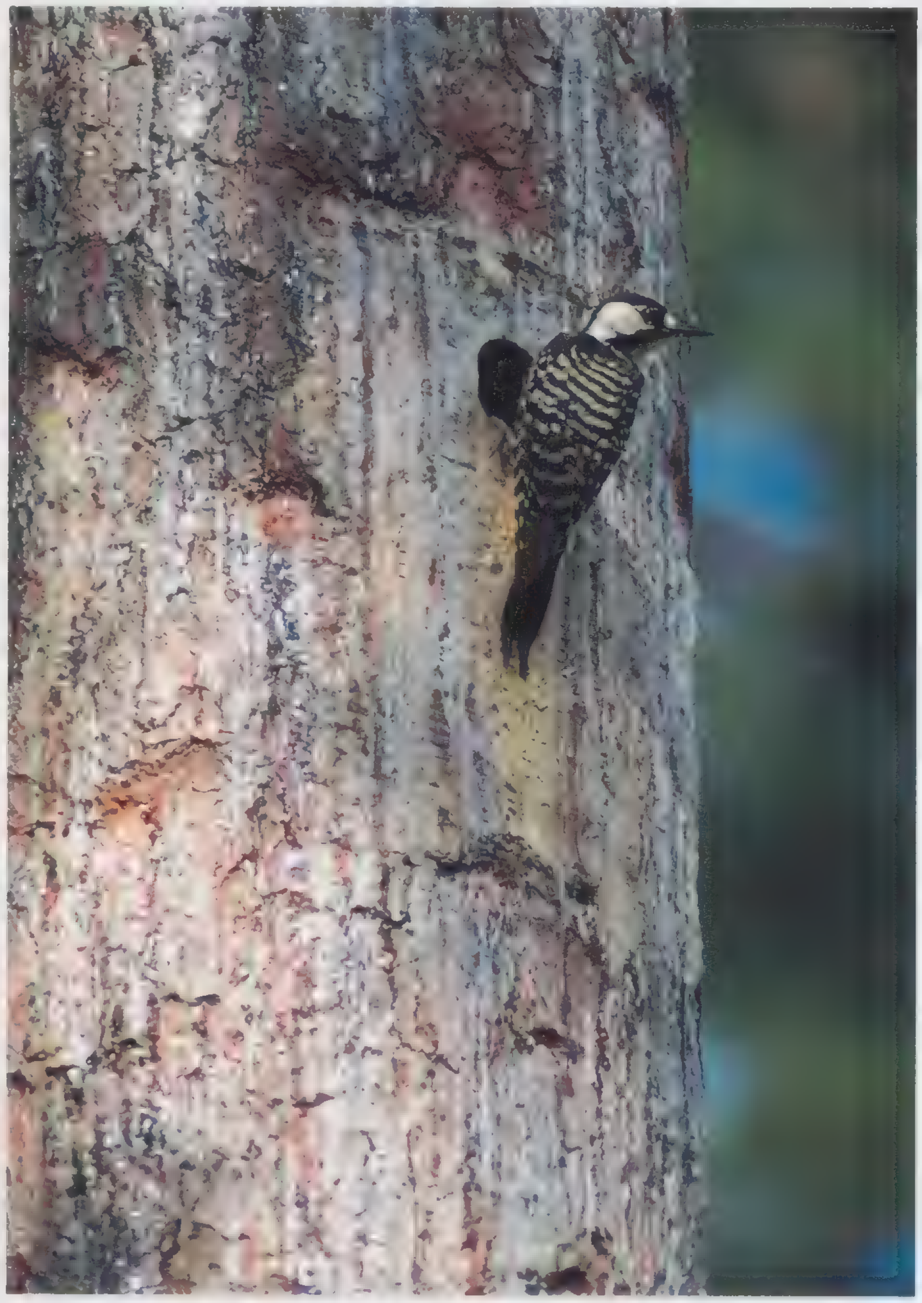
Red-cockaded Woodpeckers require old, mature pines, which provide foraging sites and cavities for nesting. Unfortunately, timber harvesting and land-clearing practices have wiped out most of these valuable trees across the South, causing such a decline in the numbers of Red-cockaded Woodpeckers that they were placed on the federal Endangered Species List in the 1970s.

Unlike other woodpeckers, these birds make their cavities almost exclusively in living southern pines. The trees are usually at least 70 years old and infected with redheart, a wood-decaying fungus that softens the heartwood, which is otherwise extremely hard. It takes months or sometimes even years for the birds to excavate a cavity. Other woodpeckers, by comparison, can often create a cavity in the dead wood they prefer in less than two weeks. The cavity trees being excavated by Red-cockaded Woodpeckers are easy to spot because of the pine resin flowing from them, whitening their trunks and making them resemble huge candles. The resin flows from pitch wells the birds tap around their cavities, perhaps as protection against rat snakes and other predators.

Red-cockaded Woodpecker pairs need a park-like area for their clusters of cavity trees. They will not tolerate undergrowth that reaches cavity height—usually between 20 and 50 feet high. The birds have an advanced social system centering around a family group, which generally consists of two to nine birds: a breeding pair, the current year's offspring, and sometimes several helpers. Helpers are adult males, usually offspring of the breeding male from previous years that have not dispersed from the group. Helpers assist with incubation, feeding young, excavating new cavities, and defending the group's territory. Young females do not stay with the group as helpers as do some of the males but leave or are chased away to find another group.

Throughout the year, each group defends a home territory, which can range in size from fewer than 100 to more than 250 acres, though the total area used may be much larger. A large expanse of pine forest is required to accommodate a healthy population.

In 1980, a highway worker found a population of Red-cockaded Woodpeckers near Pine City, in Monroe County—an area where researchers previously believed that the species had already been extirpated. Bill Shepherd, of the Arkansas Natural Heritage Commission, was notified of this unique discovery. With the consent of local landowners, the commission took steps to rescue this dwindling habitat for the benefit of the endangered woodpeckers and, in 1988, purchased 120 acres of this vital woodland. At least two groups of Red-cockaded Woodpeckers had territories on this property. The following year, the commission bought a nearby 40-acre tract of woods—the "Skinny 40"—which contained another



JOHN J. GSCHWEND, JR. (3)

population of these woodpeckers. Additional groups of Red-cockaded Woodpeckers existed on private lands near the purchased properties, but these lands have since been logged heavily, and the woodpeckers are presumably no longer there.

After asking the Arkansas Game and Fish Commission about the Red-cockaded Woodpeckers near Pine City, Arkansas, in 1997, I was put in touch with Bill Shepherd, who asked me to accompany him as he and the other researchers studied the birds. I met Shepherd and John Beneke (also of the Arkansas Natural Heritage Commission) in May of that year at the Pine City Natural Area in the 120-acre section. Shepherd had discovered an active nest in the eastern cluster (there are two clusters, eastern and western). They invited me to help them monitor the birds and find out where they went to roost each night in that cluster.

While we waited for the woodpeckers to show up, Shepherd told me about the Natural Heritage Commission. The commission's job is to identify and preserve Arkansas lands that retain their presettlement character—remnants of the original landscape. Often these places contain plants and animals that have become scarce elsewhere. This small loblolly pine forest with its endangered inhabitants fits that bill.

Shepherd told me of the uniqueness of this small population of Red-cockaded Woodpeckers. It's the only population of the birds north of the Arkansas River, he said, and the last one in the state's Mississippi alluvial plain. The other populations live in the Ouachita Mountains and Gulf coastal plain region. Another population once existed in the Eastern Ozark Mountains, but they're gone now. He said this small loblolly pine forest is as unique as the tiny Red-cockaded Woodpecker population—as it has dwindled, so have they.

We saw Red-cockaded Woodpeckers take turns tending the nest. The arriving bird would give a call, resembling the squeak of a rubber duck, as it flew into the area. Then the woodpecker in the nest would exit the cavity, allowing the other bird to enter. Shepherd concluded that the birds were either incubating eggs or brooding young.

As night approached, the woodpeckers gradually came to the different cavity trees to roost. We counted five birds, but we didn't see all of them go to roost in this cluster. Some may have gone to the western cluster a few hundred yards away. This group of Red-cockaded Woodpeckers used both. Shepherd told me that when this population was first discovered there had been a different group at each cluster, probably 10 to 12 birds in all, but now there was probably just one group and one female. When she dies, he said, the only recourse for them would be to bring in another female from outside the group.

This small loblolly pine forest is as unique as the tiny Red-cockaded Woodpecker population; as it has dwindled, so have they.

As we parted that evening, Shepherd invited me to come back and help monitor this group of Red-cockaded Woodpeckers. While driving the short 10 miles home, I reflected

Forest Service biologist Warren Montague carefully bands a Red-cockaded Woodpecker chick while Bill Shepherd of the Arkansas Natural Heritage Commission takes notes. When they're finished, Montague carries the chicks back up the tree to their nest cavity (far right).

on our conversation about the Pine City Natural Area—the last pine forest in the Arkansas delta region suitable for Red-cockaded Woodpeckers. I have lived in this area all of my life, and as a teenager in the 1970s I hunted and explored the woods around Pine City. I knew of many pine forests just like the one with the Red-cockaded Woodpeckers. Surely, I thought, some of them still exist. A few days after visiting the natural area, I drove the back roads of Monroe County, where I had once seen huge, continuous forests of pine. They're gone. Although some woodlands remain, they've been heavily logged and are now made up mostly of oaks dotted with a few small pines. I just hadn't noticed the transition.

The researchers band the Red-cockaded Woodpeckers whenever possible to keep track of the individual birds. Several days after my first visit, Warren Montague, a biologist with the U.S. Forest Service (USFS), came to band the chicks. The USFS and the Arkansas Natural Heritage Commission have a mutual agreement to provide each other with technical assistance. Montague is an expert on Red-cockaded Woodpeckers and is committed to their preservation. When he climbed the nest tree, the nestlings were just hatching, so he quickly came back down. They would have to be banded later.

Montague and his assistant Keith Pyle cleaned the various cavities with a backpack vacuum cleaner, which looks like some gadget from an old Buck Rogers movie. As they inspected and cleaned the cavities, they found that some of them contained eastern flying squirrels, which had to be captured and relocated. These small mammals compete strongly with the woodpeckers for the cavities. One cavity actually contained 10 squirrels.

Montague and Pyle installed restrictor plates over the entrance holes of some cavities. These metal plates make it difficult for other species of woodpeckers to enlarge the entrances. The

JOHN J. GSCHWEND, JR. (3)

two researchers also put inserts into various pines in the western cluster, which had been used very little by Red-cockaded Woodpeckers in this particular year. Inserts are boxes with the same general dimensions as Red-cockaded Woodpecker cavities. After cutting a hole into the trunk of the tree with a chain saw to accommodate the insert, it is installed in the tree, using putty to make it fit snugly. These inserts have been a tremendous boon to Red-cockaded Woodpecker conservation. The birds seem to use these artificial cavities as readily as natural ones. But Montague says that cavities are not the problem here; what the birds lack is enough suitable habitat. They must have a large expanse of mature pines.

On each of the cavity trees, Shepherd and I installed snake-excluding devices—three-foot sheets of aluminum that are wrapped around the trunk of the tree to make it difficult for snakes and other animals to reach the cavity from the ground. We also cut down some of the brush around the trees that might help predators climb over these metal barriers.

A week later, Montague returned to band the chicks. He found two chicks and an unhatched egg in the cavity. He carefully weighed the chicks, banded them, and recorded all of the data.

Shepherd and I monitored the nest closely during the weeks that followed. The adults fed the young dutifully. On one visit, I saw a chick peering from the hole, begging for food, which it soon received from one of the adults. I knew that the chicks were not far from fledging. But my later visits were disappointing. We couldn't determine for certain that the chicks had survived.

I visited the Skinny 40 later that summer with Shepherd. We still could not find any evidence of recent visits by Red-cockaded Woodpeckers, although the place is within range of the birds in the 120-acre section. We cleaned brush from around the old cavity trees and placed snake-excluding devices on them. But Shepherd said that we would have to do much more if Red-cockaded Woodpeckers were ever to make this tiny pine forest home again.

In the winter, John Beneke did a controlled burn on the 120-acre section. The park-like conditions that Red-cockaded Woodpeckers require were once maintained by forest fires caused by lightning. Now people must take over that role, burning thickly forested, brushy areas artificially to create the ideal conditions for the birds.

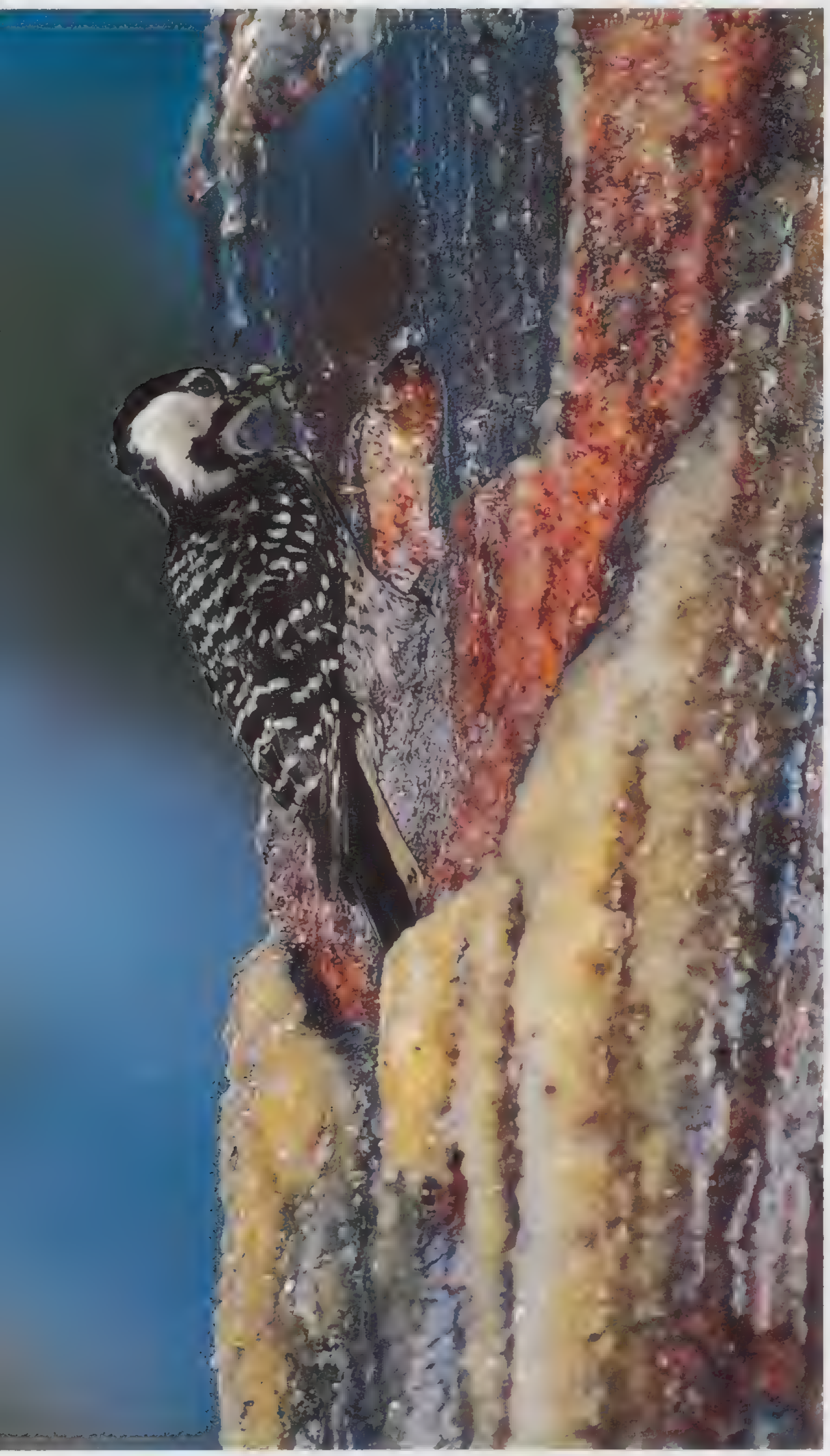
This past spring, another nest was found in the 120-acre section. After several fruitless visits to the site earlier, we had assumed that the

female had died and there would be no nest this year. The nest in the western cluster was in an insert that Montague and Pyle had installed the previous year.

We monitored the nest until Shepherd thought the nestlings would be old enough to band, and then he asked Montague to come to the site. He found three chicks in the cavity and placed a metal band on each one's right leg.

In the days that followed, we watched the activity at the cavity as the adults fed the young. We knew the male by his bands—a metal one on his left leg and yellow and white ones on his right. The female and helpers had no bands that we could see. Montague said some of the birds in this group may not be helpers but just hangers-on.

As time neared for the young to fledge, they began peering out of the cavity. We saw at least one with a red spot on its head—a male—and at least one without—a female. Shepherd informed me that if the chicks survived and the female could be captured, she would probably be moved somewhere else in the state to another cluster that needed a female. If she were left here, she would probably be driven out with nowhere to go—unless a new group became established in the Skinny 40.



Cavity trees excavated by Red-cockaded Woodpeckers are easy to spot—the flow of pine resin on their trunks makes them resemble huge candles.

The nest was empty the next time we came. And when the adult woodpeckers returned to roost that evening they were alone. We saw no sign of the chicks. But these birds usually leave the nest when they're between 26 and 29 days old, and Shepherd and Montague told me that they don't roost in cavities at first when they fledge, so this wasn't necessarily a bad sign.

While monitoring the group one evening, we spotted a Red-cockaded Woodpecker with a band on its left leg. Perhaps it was one of the young from the previous year's nest that had survived after all. On a later visit, I heard a lot of Red-cockaded Woodpecker activity between the two clusters. As I investigated, I saw the adults feeding two chicks—one with a red spot on its head and one without—so it looks like two of the three chicks successfully fledged: a male and a female. These are hopeful signs that chicks from two different years survived.

On my last visit to the Pine City Natural Area, Shepherd and I saw six adult Red-cockaded Woodpeckers go to roost in the eastern and western clusters as we kept in touch by walkie-talkie. Although we didn't see the chicks, we're hopeful that they are roosting in the trees until they learn to use the cavities.

Since I began monitoring the birds at Pine City, a number of people have told me that I'm wasting my time. The Red-cockaded Woodpeckers there don't have a chance, they say. They're so isolated from the rest of their species that they'll eventually all perish. I asked Warren Montague why he thinks this tiny, isolated group of woodpeckers should be saved. "To use its reproductive capacity as a nursery to augment other recovering populations," he said, and then added, "from an ecosystem integrity standpoint, it's the morally and ethically right action to take."

There's always hope—as long as a species exists. I realize that to some people this small population may not be all that significant in the overall population of the Red-cockaded Woodpecker, but I believe every place an endangered species attempts to hang on is a link in a vital chain. At this stage, we shouldn't be willing to sacrifice any part of that chain. Remember, pine forests once spread across this area like a vast ocean, providing thousands of acres of unbroken habitat for these once plentiful woodpeckers and other wildlife—until people turned this ocean into a shrinking pond. I may be just a blue-collar worker and a beginning birder at best, but I'm committed to this small population of Red-cockaded Woodpeckers. The emptiness I felt when I saw that abandoned cluster at the Skinny 40 gnaws at me still. I hope this will not be the fate of the rest of the Red-cockaded Woodpeckers in the Arkansas Delta. That is not acceptable to me. I just wish these tiny ponds of habitat all over the world would stop shrinking. ■

John J. Gschwend, Jr., is a freelance writer and photographer based in Marvell, Arkansas. This is his first article for this magazine.

BRIAN SMALL

An Investment for the Birds

You can turn a simple plan for your future into an investment for the birds. A planned gift in the form of a bequest or life income agreement is an ideal way to plan for your future, to retain real benefits for yourself, and to enhance the Lab of Ornithology's efforts in bird research and conservation.

Watch your mail box for details, or contact Scott Sutcliffe, associate director, Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Phone: (607) 254-2424; e-mail: sas10@cornell.edu.

Cornell Lab of Ornithology
For the Study, Appreciation, and Conservation of Birds
Visit our web site at http://birds.cornell.edu

THE FIRST FAMILY OF FEEDERS HAS A WHOLE NEW GENERATION.

Sleeker designs, choice of green enamel or burgundy finish, and an exclusive peanut cage feeder in [illegible] stainless steel. Fully assembled. [illegible] 1-800-352-9164

DROLL YANKEES®
THE NEW GENERATION

BINOCULARS AND SPOTTING SCOPES

Optic Outfitters for Birders

Authorized Dealer for:
Leica, Zeiss, Swarovski, Swift, Nikon, Celestron, Bausch & Lomb, Kowa, Questar, Tele Vue, Pentax, Canon, Meade, Steiner, Leupold, Bushnell, Burris, Fujinon, Eagle Optics, Bogen, Velbon, Brunton, Mirador

Get the best information, advice *and* prices from Birders who know: *Birds, Birders, Birding and Birding Equipment.* We've built a nation-wide reputation on offering birders the best in selection, service and prices on quality optic products and are told by our customers that our comprehensive catalog is the most complete birding optic catalog available. Our courteous and knowledgeable sales staff will assist you in selecting from our complete and extensive inventory, your best value in quality birding equipment.

☎ *(800) 289-1132*

Web Site: http://www.eagleoptics.com

Call and ask for your FREE Comprehensive Optic Buying Guide & Discount Price List on optics from all major manufacturers

Eagle Optics

2120 W. Greenview Dr. #4 Middleton, WI 53562
Technical Assistance: (608) 836-6568
Order Line: (800) 289-1132 Fax: (608) 836-4416

THE AMERICAN BIRDING ASSOCIATION

PO Box 6599
Colorado Springs, CO 80934
phone: 800/850-2473 or fax: 719/578-1480
E-mail: member@aba.org
Web Site: www.americanbirding.org

Join the American Birding Association — the only North American association for field birders. Get involved with bird education, conservation projects and

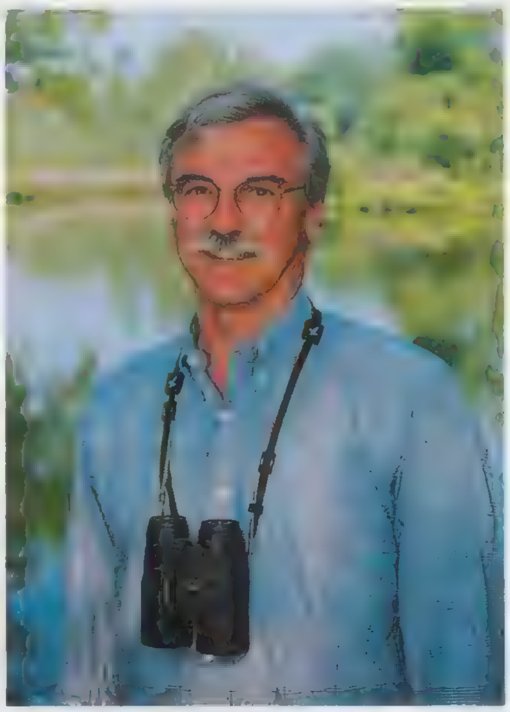
- Stay in touch with the latest issues in birding through **Birding** magazine and **Winging It** newsletter.
- Find all of the books, optics, and accessories you need in **The Birder's Catalog.**
- Make contact with local birders as you travel using our **Birder's Resource Guide.**
- Join us at birding **conferences** and **conventions.**

"The best value in birding today!"

ANNUAL REPORT
1998

BY JOHN W. FITZPATRICK, DIRECTOR

The mission of the Cornell Laboratory of Ornithology is to interpret and conserve the earth's biological diversity through research and education focused on birds.



This mission guided us through an important year of growth at the Lab during 1998. It is both a pleasure and a challenge to describe the range of projects and accomplishments supported by our members and participants during the past year. The Lab of Ornithology is unique in the United States and one of a very few institutions of its kind worldwide. Focusing on the remarkable window into the natural world that birds provide, we engage in basic and applied research, innovative educational projects, strategic partnerships with other institutions, and advanced training in natural sciences at Cornell University. What follows is a sample of the past year's highlights.

FIELD RESEARCH AND PUBLICATION

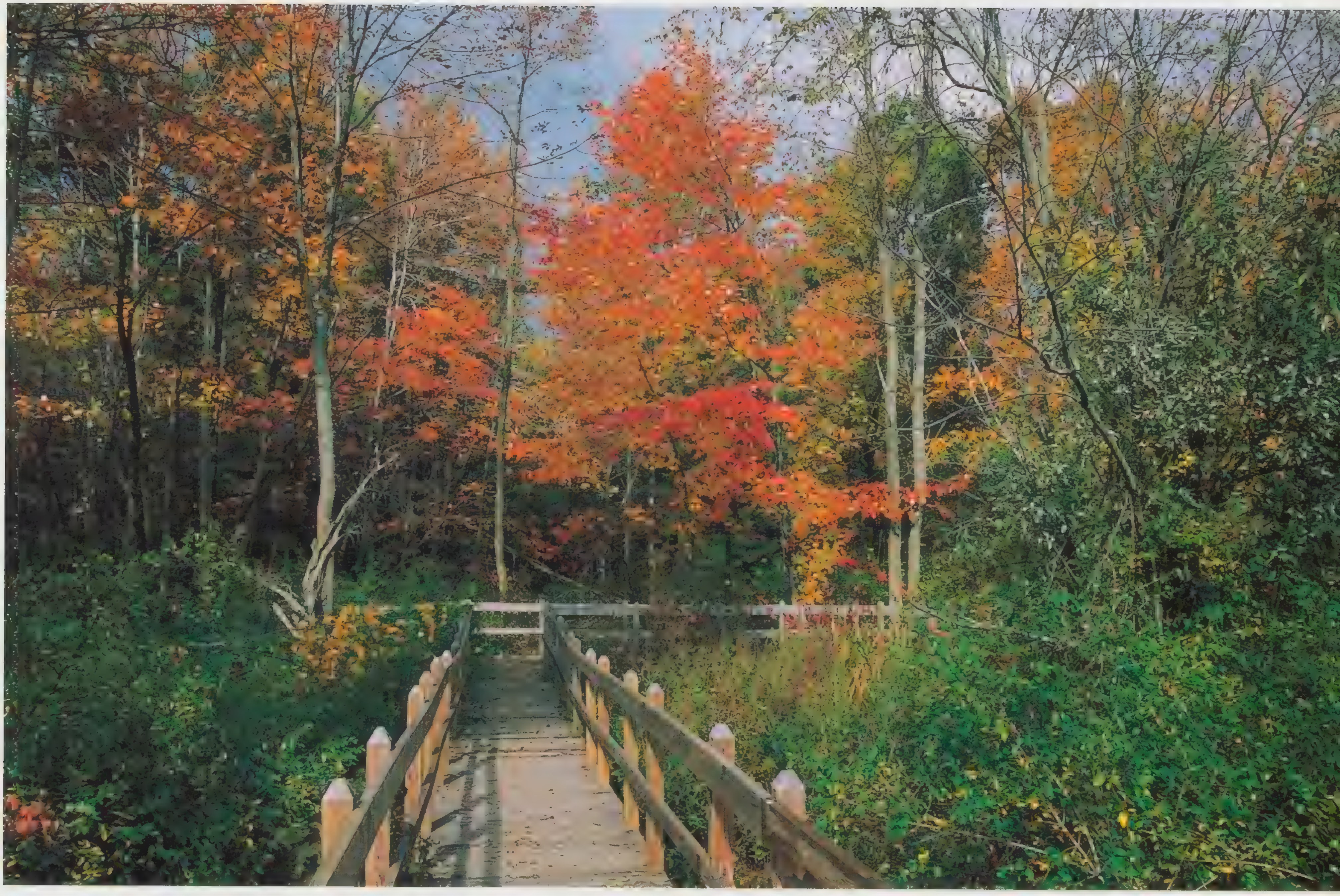
Lab scientists and students conducted field research in ecology, behavior, conservation biology, and endangered species management. Our Bioacoustics Research Program (BRP) continued its cooperative research with the U.S. Navy in the Pacific Ocean, using sophisticated recording devices invented at the Lab to "observe" the behavior of whales in response to human-generated noise. BRP also stepped up development and field testing of acoustical monitoring stations designed to count migrating birds (in New York, Texas, and Florida) and chorusing frogs (in Delaware). André Dhondt, director of Bird Population Studies, led a team examining the effects on bird populations of short-rotation willow harvesting for energy production in Upstate New York. Populations of shrub-inhabiting birds are declining rapidly throughout the eastern United States, and willow harvesting could provide both an alternative energy source and relief for a threatened bird community. My own research on Florida Scrub-Jays continues to focus on dispersal and its implications for long-term conservation of this rapidly declining Florida specialty. As I describe on page 37, our students studied birds on three continents.

Research does not become science unless it is made available to everyone as published literature. In 1998, Lab staff and associates published eight technical articles and nine books, along with several feature articles in magazines and newspapers. This represents the Lab's most productive year ever for scientific publication.

BIRD POPULATION STUDIES AND CITIZEN SCIENCE

At the Lab we are convinced that science should be accessible to everyone, regardless of age, education, or social background. Again capitalizing on the unique attractions of birds, the Lab is pioneering a burgeoning new enterprise called "citizen science." Project FeederWatch, the Nest Box Network, Birds in Forested Landscapes, the Cerulean Warbler Atlas Project, and other Lab research projects provide opportunities for thousands of citizens across North America to participate in discovering key features of bird populations that

TIM GALLAGHER



cannot be detected through more conventional scientific methods. This experience gives participants new perspectives on their own backyards while also gathering vital long-term data on bird numbers, trends, and behavior. Our emerging challenge is to convert these data into guidelines for habitat conservation and restoration. Information from Project Tanager, for example, is not just being published in the technical literature but also in an easy-to-read format for forest managers across the continent.

We made historic advances in the use of the Internet during 1998. In close partnership with the National Audubon Society, we launched BirdSource (http://birdsource.cornell.edu) to provide everyone the opportunity to submit their bird observations directly into a long-term database via the World Wide Web. This cutting-edge computer technology is revolutionizing nature viewing and providing a higher purpose for America's fastest-growing outdoor recreation. For example, through BirdSource, birders helped document a record-breaking "superflight" invasion of northern finches across eastern North America last winter, providing our most detailed look ever at the dynamics of this irregular occurrence. The first Great Backyard Bird Count received extensive coverage in print and broadcast media across the nation and drew more than a million "hits" to the BirdSource web site during its three-day run. The 2nd Annual Great Backyard Bird Count will take place on February 19–22, 1999, and promises to be even more successful than the first (see page 5.) Please be sure to participate.

SCIENCE EDUCATION

After observing that 1,000 schoolteachers were using Project FeederWatch in their classrooms, educators at the Lab several years ago began developing a formal curriculum called Classroom BirdWatch designed for middle-school students. This program, now pilot tested in more than 300 schools nationwide, meets the rigorous National Science Teaching Standards. More important, however, Classroom BirdWatch receives rave reviews from students, teachers, and parents. The curriculum encourages students to develop their own research projects observing real birds outside their win-

With 220 acres of woods and wetlands and four miles of trails, Sapsucker Woods Sanctuary (above) provides a home for the Lab as well as numerous waterfowl and colorful songbirds, such as this male Northern Cardinal.

TOM VEZO

This year the Lab made monumental strides in the use of the Internet for large-scale data gathering. In partnership with the National Audubon Society, we created BirdSource, an exciting interactive web site that allows bird watchers to enter their bird sightings directly on line. Above, BirdSource staff Tom Fredericks (seated) and Steve Kelling show FeederWatch project leader Laura Kammermeier the latest additions to the Warbler Watch Web page. Our new Classroom BirdWatch curriculum encourages students to develop their own research projects, observing birds right outside their classroom windows. At right, these youngsters clearly enjoy watching birds for science.

dows. It provides interaction with Cornell scientists and encourages direct Internet contact among classrooms across the continent. In another major partnership with the National Audubon Society, funded by the National Science Foundation, the Lab launched a major program for training teachers to use this and other citizen-science projects in their classrooms. Project PigeonWatch received new funding to provide training materials for urban classrooms engaging in science education using the most ubiquitous bird of our cities. The power of birds as communicators will soon be made available to millions of schoolchildren across North America.

CONSERVATION PARTNERSHIPS

The Lab is a small place with big ideas. To accomplish as much as we can with limited resources and staff, we partner with other conservation and scientific organizations, corporations, and government agencies that are responsible for biological monitoring or land management. Our farthest-reaching new partnership is with the National Audubon Society, a conservation powerhouse with half a million members and more than 500 chapters in the United States alone. Similar in mission and complementary in strengths, the Lab and Audubon are pooling expertise and resources around several major programs of education and citizen science. During 1998, we also worked with The Nature Conservancy, Conservation International, American Bird Conservancy, and the U.S. Fish and Wildlife Service. In September, we signed a major cost-sharing agreement with the U.S. Forest Service to help establish closer involvement between citizens and their National Forests across the country. Discussions are underway with the Environmental Protection Agency to use BirdSource to encourage citizen-based tracking of bird migrations. Encompassing all of these partnerships and more was the Lab's pivotal role in Partners in Flight, a major consortium of public and private organizations currently developing a comprehensive, science-based framework for bird conservation in the next century. The Lab's Ken Rosenberg is a leading scientific architect of this framework.

BIOACOUSTICS RESEARCH PROGRAM AND THE LIBRARY OF NATURAL SOUNDS

The Lab and Cornell University together constitute the world's leading center for research in bioacoustics—the study of sound in nature. Bioacoustics Research Program director Chris Clark was featured this year in a popular television documentary on whale behavior. Technical breakthroughs he and his staff initially developed for whale monitoring will enable remote counting and tracking of birds across continents, using computer-aided recognition of their unique nocturnal flight notes. Through a partnership established this year with the Lab, scientists in Israel will use our technology to monitor migrant birds passing between Europe and Africa. Our world-famous Library of Natural Sounds (LNS) now contains more than 130,000 recordings of some 6,000 bird species and was featured in numerous radio pieces in 1998. LNS continued producing materials for field training of conservation scientists in the tropics and also completed several new sound guides, including *Birds of Florida* and *Sounds of Neotropical Rainforest Mammals.* The Lab's annual sound-

TIM GALLAGHER (3)

recording workshop attracted recordists from as far away as Australia, Japan, and Israel.

The biggest splash this year came when our efforts to fill an important new position at the Lab resulted in a twofold success. After conducting a national search involving many of the top researchers in animal communication, we were extremely fortunate to attract Jack Bradbury to become the new Robert G. Engel Professor of Ornithology and director of the Library of Natural Sounds. The fact that Bradbury is married to another world-renowned scientist, Sandra Vehrencamp, made our search even more exciting, because Sandy is an expert on avian social behavior. (Among their many accomplishments, Jack and Sandy recently coauthored a remarkable textbook, *Principles of Animal Communication.*) Sandy will join the Bioacoustics Research Program at the Lab when she and Jack arrive in the spring of 1999.

COLLEGE AND PROFESSIONAL TRAINING

Through courses and seminars, graduate training, post-doctoral affiliations, and interdepartmental collaborations, the Lab and Cornell University provide a leading center for advanced training in ornithology and related disciplines. Lab scientists taught college courses this year in ornithology, conservation biology, bioacoustics, and animal behavior. Graduate students associated with the Lab studied cowbird parasitism in New York, response to forest fragmentation by Cooper's and Sharp-shinned hawks across New England, evolution of partial migration among American Kestrels in Pennsylvania, mixed flocking of Bridled Titmice in Arizona, heavy-metal contamination of White-tailed Ptarmigan in the Colorado Rockies, dispersal genetics of scrub-jays in Florida and Tree Swallows in New York, the evolutionary role of butterfly foraging by Rufous-tailed Jacamars in Venezuela, and evolutionary aspects of nest parasitism among widowbirds and waxbills in southern Africa. In a vital new development, several graduate students began evaluating the success of our citizen-science projects as a means of teaching the public about science and the environment.

MEMBERSHIP AND PUBLICATIONS

Nearly 30,000 people now support the Lab as members or participants in citizen-science projects. *Living Bird* won yet another prestigious national award and has earned a place as one of the most elegant and informative nature magazines. *Birdscope* expanded to 12- and 16-page issues and continues to receive praise for its communications about citizen-science and research at the Lab. Full revision of the Lab's famous Home Study Course in Bird Biology proceeded briskly toward its scheduled release in June 1999. Finally, in 1998 the Lab joined with the American Ornithologists' Union as co-owner of the ambitious *Birds of North America* project, which remains on schedule to produce scholarly biographies of every species of bird on the continent by the year 2002 (see *Living Bird*, Spring 1998, and the special offer for Lab members on page 9).

THANK YOU

We owe the members of the Lab a huge debt of thanks. Simply put, your financial support and your participation in our citizen-science projects make it possible for the Lab of Ornithology to exist. You have helped create a unique center for innovative science, education, and conservation. You make it possible for us to expand our educational reach to all elements of society. Already, thanks to you, our reach extends well beyond Cornell into school classrooms, youth-group projects, backyards, and National Forests across North America. Lab staff assist decision makers in numerous state and federal agencies and in the world's leading conservation organizations. We train some of America's best young professionals in ornithology, ecology, evolutionary biology, animal behavior, and conservation science. In one way or another, all of our programs focus on creating new opportunities for citizens to monitor and preserve biodiversity by becoming involved with the birds and habitats outside their windows. We have enormous challenges ahead, but we are excited about the programs we are building to meet them. On behalf of all the remarkable staff at the Lab, I thank you for being a part of this process. ■

The Lab is leading the way in the burgeoning new field of "citizen science," developing innovative projects, such as the Nest Box Network (above), that use the amazing abilities and enthusiasm of amateur bird watchers to increase our scientific knowledge of birds. These unique partnerships between everyday Americans and professional ornithologists are vastly extending the reach of our research efforts, allowing us to gather data from thousands of observers across the continent.

ADMINISTRATIVE BOARD

Edwin H. Morgens, Chair
South Norwalk, Connecticut

E. Edward Bruce
Washington, D.C.

Peter J. Bruns
Ithaca, New York

David L. Call
Ithaca, New York

Jean Wallace Douglas
Washington, D.C.

Theodore L. Eliot, Jr.
Sonoma, California

Jane V. Engel
Ho Ho Kus, New Jersey

Mary P. Hines
Winnetka, Illinois

Bruce S. Howard
Orinda, California

Imogene P. Johnson
Racine, Wisconsin

Mary L. Kiplinger
Poolesville, Maryland

Frank Y. Larkin
Greenwich, Connecticut

Randolph S. Little
Basking Ridge, New Jersey

Wendy J. Paulson
New York, New York

Olin Sewall Pettingill, Jr.
Euless, Texas

Frank H.T.Rhodes
Ithaca, New York

Edward W. Rose III
Dallas, Texas

Robert F. Schumann
Binghamton, New York

Carol U. Sisler
Ithaca, New York

Stanley A. Temple
Mazomanle, Wisconsin

Charles E. Treman, Jr.
Ithaca, New York

Charles Walcott, Ex-Officio
Ithaca, New York

Joseph H. Williams
Spring Island, South Carolina

David W. Winkler
Ithaca, New York

PROGRAM DIRECTORS

John W. Fitzpatrick
Louis Agassiz Fuertes Director

Scott Sutcliffe
Associate Director

Richard E. Bonney, Jr.
Director, Education/Citizen Science

Greg Budney
Curator, Library of Natural Sounds

Christopher W. Clark
Director, Bioacoustics Research Program

André A. Dhondt
Director, Bird Population Studies

Tim Gallagher
Director, Publications

Kevin J. McGowan
Curatorial Associate, Systematics and Collections

Carol Pyhtila
Director, Operations

CHAIRMAN'S COUNCIL

Steve and Ellen Adelson
Mr. Rex J. Bates
Mr. Harold Boeschenstein, Jr.
Mrs. Charles T. Chapin
Mr. & Mrs. Richard T. Cliggott
Mr. & Mrs. Judson M. Dayton
Mrs. Jean Wallace Douglas
Mrs. Jane V. Engel
Mr. & Mrs. Clifton C. Garvin,Jr.
Ms. Adelaide Gomer
Mr. T. Richard Halbertstadt
Mrs. Harold H. Hines, Jr.
Mrs. Muriel K. Horacek
Mrs. Imogene P. Johnson
Mrs. Mary L. Kiplinger
Mr. Randolph S. Little
William and Linda Macaulay
Fred and Elizabeth McLafferty
Davis U. Merwin
Edwin and Linda Morgens
Mr. & Mrs. Howard Morgens
Mr. Roy Park, Jr.
Mr. Louis Polk, Jr.
Mr. & Mrs. Edward W. Rose III
Mr. & Mrs. Robert F. Schumann
Mrs. Carolyn Sherwood
Mr. Bailey Smith
Mrs. Lyman K. Stuart
Mr. Walter A. Thurber
Mr. & Mrs. Charles E. Treman, Jr.
Mrs. Mary Clare Ward
Mr. & Mrs. Joseph H. Williams
Clara Taylor Yager

PigeonWatch uses the most common city bird as a subject of scientific study.

TIM GALLAGHER (3)

The Lab has citizen-science projects to fit all levels of interest and ability, from the most basic, Project PigeonWatch (below), to the most advanced, Birds in Forested Landscapes (above).

BENEFACTOR LEVEL

Anonymous
Mrs. Margaret R. Barton
Ms. Carol R. Benfell
Mr. Richard L. Booth, Jr.
Ms. Louise I. Brown
Mr. and Mrs. John E. Byron
Mr. Ronald L. Clendenen
Mr. James G. Coors
Mr. Eric Cutler
Ms. Louisa R. Davis
Ms. Clover M. Drinkwater
Mrs. Henry W. Edgell
Ms. Norma J. Edsall
Russ and Carol Faucett
Mr. Robert T. Foote
Shelley Ford
N. Elmo Franklin, Jr.
Mr. Robert G. Goelet
Mr. Crawford H. Greenwalt, Jr.
Mr. James D. Hazzard
Mr. and Mrs. Kenneth E. Hill
Mr. and Mrs. W. G. Jens
Mr. David Junkin
Dr. and Mrs. W. Keith Kennedy
Dr. Lewis F. Kibler
Mr. George T. Lacey
Mr. Alexander M. Luke
Mr. Michael T. Martin
Mr. Richard G. McClung
Mrs. Emily B. McKay
Mrs. Frances B. Newell
Ms. Joyce Ochs
Mr. and Mrs. Henry Panasci, Jr.
Mr. George M. Pflaumer
Mr. William E. Phillips
Mrs. Sally Quinn
Ms. Alice M. Rand
Dr. George B. Reynard
Mr. Bob Righter
Mr. and Mrs. Steven C. Rockefeller
Dr. and Mrs. Donald C. Samson
Mr. Barry Schwartz
Mr. and Mrs. James W. Spencer
Mr. and Mrs. James M. Stewart
William R. Stott, Jr.
Mr. Paul C. Suthern
Mr. Michael L. Timmerman
Mr. Lewis E. Topper
Mrs. S. N. Wagner
Mrs. Charles F. Walcott
Mr. Mark Wallace
Mrs. Robert Wehner
Dr. and Mrs. Ralph C. Williams
Mr. Ken Windheim

SPONSOR LEVEL

Ms. Kate Allured
Ms. Patricia L. Angotti
Mr. Donald Barnes
Ms. Joyce E. Bartlett
Mr. Warwick P. Bonsal, Jr.
Mr. Lawrence Brennan
Mr. Craig Brodock
Mr. Jack Brubaker
Mr. Anthony W. Bryant
Mr. Theodore J. Bullard, Jr.
Ms. Elsa A. Burrows
Ms. Nancy Camacho
Mrs. Rita Capello
Mr. Carl R. Carlsen
Mr. Dwight R. Chamberlain
Ms. Jane Chesnutt
Mrs. Nancy Claflin
Mr. James Cobb
Ms. Francine M. Cohn
Mrs. Edith Coxe
Ms. Agnes D. Cralley
Mrs. Jackson David
Ms. Martha E. Day
Mr. and Mrs. Thomas E. Donnelley II
Mrs. James Dudley
Ms. Carol Easter
Ms. Catherine G. Elliott
Hardy and Barbara Eshbaugh III
John and Molly Fitzpatrick
Mr. and Mrs. J. A. Frost
Mrs. Leroy G. Garnsey
Mr. and Mrs. Bradley Grainger
Mrs. Marcia Grand
Dr. Ruth Grant
Mrs. Phyllis Greenberg
Mr. and Mrs. Chris Haller
Mr. Thomas M. Hampson
Mrs. Shirley A. Hance
Mrs. Suzanne O. Happeny
Mrs. Jane A. Haviland
Mr. Robert F. Henricks
Dr. Michael L. Jesudason
Mr. Samuel C. Jones
Dr. Robert E. Kleiger
Mr. Anthony A. Lapham
Mr. Frank Y. Larkin
Mr. Jay Lehman
Ms. Mary Ann Mahoney
Mr. Guy E. C. Maitland
Ms. Bertha B. McCormick
Mr. Philip E. Merritt
Mr. James Murtaugh
Ms. M. A. Myers
Mr. Donal C. O'Brien, Jr.
Ms. Judith O'Neale
Mrs. Culver Orswell
Mr. C. W. Eliot Paine
Mr. Francis Pandolfi
Mrs. Beverlee M. Penney
Mr. H. C. Randolph, Sr.
Mr. Arnold M. Reynolds & Family
Dr. Beverly S. Ridgely
Mrs. Elizabeth E. Rowley
Mr. Andrew Sabin
Mrs. Patricia C. Schramm
Mr. Andrew J. Schroder II
Ms. Margaret F. Scott
Mrs. Kandis Scott
Mrs. C. Winfield Scott
Mr. and Mrs. Donald B. Scully
Mr. and Mrs. C. Sheldon Seibel
Ms. Anita E. Seits
Dr. Lester L. Short and Jennie Horn
Ms. Barbara J. Siepierski
Miss Mary Ann Siri
Mr. William R. Stewart
Mr. Frank D. Stout
Mr. and Mrs. Charles Tatay
Mr. John D. Tessaglia
Mr. Joel E. Ueber
Mrs. Emily Wade
Mr. and Mrs. Solomon Weinstock
Mrs. Robert Weinstock
Mr. William E. Willis
Mr. Robert Winthrop II
Mrs. Vonda Woodfield
Ms. Winifred Woodmansee
Ms. Jeannie Wright

PATRON LEVEL

Dr. Jan Adams
Dr. Mary Alice Anderson
Dr. Paul Barry
Mr. and Mrs. R. G. Beaton
Mrs. Karen P. Beekman
Mrs. Gertrude Behrle
Ms. Linda Bell
Ms. Mary Alice Bergan
Ms. Dorothy A. Bloecker
Mr. P. E. Bowman
Mr. Robert R. Bowman
Dr. Robert L. Brandt, Jr.

Mr. Dennis Brown
Mr. Frank L. Bruce
Mr. Walter T. Bruce
Mr. and Mrs. Donald J. Bruckmann
Ms. Betty A. Bruhns
Ms. Andrea Bryant
Dr. Theresa L. Bucher
Ms. Phyliss Buegel
Ms. Paula Cabot
Mr. John B. Cairns
Miss Betty Cambre
Mrs. Victor Carboni
Ms. Dudley B. Carlson
Dr. Susan H. Carlyle
Dr. and Mrs. David Carpenter
Douglas J. Carroll
Mr. O. B. Carter
Ms. Marjorie Carter
James and Glenda Cartwright
Ms. Kathaleen A. Cattieu
Mr. Robert E. Chapman
Ms. Joyce W. Cima
Mr. Gary O. Clark
Ms. Christina Clayton
Ms. Jean W. Cohn
Ms. Kathryn Collins
Mrs. John F. Cook
Mr. Paul R. Cooley
Dr. and Mrs. Dale R. Corson
Mr. E. Lingle Craig
Ms. Kathleen S. Crawford
Mr. James F. Cubbidge
Mrs. Lindsay M. Czerwinski
Ms. Helen S. Dahl
Van and Randi Dauler
Ms. Letitia Davis
Rodney H. and Erica P. Davis
Lyle Davis
Mr. Henry P. Day
Mr. Wallace C. Dayton
Mr. David J. Decker
George and Mickey Deike
Mr. and Mrs. Nelson Delavan, Jr.
Mrs. Edward E. Donaldson
Mrs. Joanne Dranginis
Dr. Paul J. DuBowy
Arthur Dudycha
Mrs. Robert Duemling
Mrs. Judy Dunton
Miss Eileen Ann Edelblute
Mr. Michael O. Efird
Mr. Gerald Ehrhart
Mrs. Mary S. Eldridge
Mr. Bradford M. Endicott
Ms. Helene V. Fatt
Mrs. Benne Ferrell
Ms. Bonnie Finch
Mr. Kevin L. Finnan
Mrs. Patricia A. Fitzgerald
Mrs. Peter B. Flickinger
Ms. Mary Floyd
Mr. A. J. Flynn
Mr. Emery M. Froelich
Mr. William F. Fuerst, Jr.
Mr. Harry Fuller
Mr. Edwin F. Gamble
Mr. William V. Gard
Mr. Charles A. Gardner
Micah Gelfand
Ms. Karyn E. Gell
Jim and Kathy Gero
Mr. William G. Gilstrap
Mr. Henri Giugni
Ms. Shana Gordon
Mr. William F. Gratz
John and Jacqueline Graves
Wayne & Else Greenstone
Mr. Ken Greenwood
Mrs. Nina B. Griswold
Mr. Joe B. Guinn
Mr. Kevin Hable
Mr. George Hadwen
Dr. Paul C. Hager
Ms. Carol Hanawalt
Ms. Dolores M. Hansen
Mr. Steve Harper
Mr. Dan Harville
Mr. and Mrs. Robert K. Healey
Mr. Charles H. Heine
Ms. Patricia Heirs
Mr. Karl H. Hemmerich
Ms. Annette Heppler
Ms. Margaret Hermann
Ms. Vicki R. Herrmann
Mrs. Leona S. Hine
Miss Sharon Hintze
Dr. John Hitchcock
Ms. Tracy Holmes
Mr. Robert T. Horn
Vernon and Winona Howe
Dr. Ronald Hoy
Mr. and Mrs. Michael Huber
Ms. Rebecca C. Huddle
Ms. Barbara Hughes
Mr. David E. Huset
IFF Wildlife Club
Ms. Lois J. Inskeep
Ms. Joanna Jackson
Mr. Skip Jonas
Ms. Maria Kaprielian
Mr. Louis J. Kaufman
Ms. Belinda A. Keever
Mr. and Mrs. Robert L. Kehr
Mr. Ronald J. Kemperle
Mr. E. H. Kendig, Jr.
Mrs. Ellen M. Kiernan
Gilbert M. Kiggins
Mr. John C. Klimek
Mr. James Kloppenburg
Mr. Patrick T. Knight
Ms. Sue A. Kraft
Del Kunzler
Janice Kuziel
Landor Associates International Limited
Louise LeCam and Family
Mr. and Mrs. Marvin Lee
Mr. William T. Leeburg
Mr. John E. Leggat
Ms. Grace Lincoln
Ms. Cynthia Linton Evans
Ms. Karen Lloyd
Mr. Ken Lufkin
Mr. Erik Lund
Mrs. Madeline Lutz
Mr. and Mrs. David B. Magee
Dr. and Mrs. Gerald Maisel
Mrs. Frederick W. Manger, Jr.
Ms. Susan B. Martin
Mr. James P. Massie, Jr.
Mr. Paul A. McAfee
Mr. Everett G. McDonough, Jr.
Mr. Robert E. McFarland
Mr. and Mrs. Donald E. McKnight
Mr. Kevin McKown
Mr. Robert C. Mealey
Mr. Jim Metropoulos
Mr. and Mrs. Brian Mishell
Mrs. Sandra Morrissey
Mr. Duryea Morton
Mr. Jerry D. Moser
Mr. Neil Multack
Mr. and Mrs. Don Murray
Mr. Gary Myers
Ms. Linda L. Neal
Mr. and Mrs. Kenneth Nebenzahl
Ms. Patricia Antoinette Neff
Mr. James Nelson
Mr. Donald O. Ney
Dr. and Mrs. Orville Nielsen
Mr. and Mrs. B. E. Nordling
Mr. David C. Nutt
Mrs. Lillian Olsen
Mrs. Lorain S. Olsen
Mrs. Murray Olyphant, Jr.
Edward and Barbara Page
Ms. Rebecca T. Parkin
Mr. John A. Paton
Ms. Joye Patterson
Mr. Clinton R. Pearson
Mr. Mark E. Perkins
Dr. and Mrs. Robert A. Petersen
Dr. William F. Peterson
Mr. and Mrs. Charles Pietras

The Lab's famed Library of Natural Sounds continued producing tapes and CDs for training conservation biologists in the tropics and also completed several new sound guides for wildlife watchers.

TOM VEZO

FeederWatch, now in its second decade, is our most popular project, with more than 10,000 participants nationwide counting backyard birds, such as this White-throated Sparrow.

Mr. James Plyler
Mr. Zoltan Porga
Ms. Theresa H. Potts
Mr. Kim W. Primmer
Ms. Patty Quillin
Mr. Richard J. Rashaw
Ms. Marcia Rauwerdink
Mrs. Sharon Rea
Ms. Doris Reed
Mr. and Mrs. James Rehmus
Mr. and Mrs. Alan Rennie
Mr. William A. Richards
Dr. Lois M. Roberts
Mr. James A. Rockoch
Mr. Stan Rodwin
Ms. Patricia Rossi
Paul and Cynthia Roush
Virginia and John Rupert
Ms. Harriet W. Rylaarsdam
Ms. Margaret Sandrof
Mrs. Lynne R. Scheer
Ms. Lylah Schieck
Ms. Madelon A. Schouten
Susan and Ford Schumann
Ms. Paula M. Schutte
Mr. Kurt R. Schwarz
Mr. Mitchel Schwass
Mrs. E. Wilbur Scott
Mrs. Edith Seegers
Dr. Maurie Semel
Ms. Susan Sexton
Ms. Victoria Shaw
Paul and Cindy Sherman
Sherwood Family Trust
Mr. Douglas Shore
Ms. Sally Shore
Mr. Randall Siebert
Ms. Linda Sinacori
Mr. and Mrs. John W. Sink
Alan and Sarah L. Skerker
Mr. and Mrs. Richard A. Sloss
Ms. Nancy Soulette
Mr. and Mrs. Randolph C. Speers
Ms. Nancy Spencer
Ms. Judith Staberow & Family
Robert Stewart
Mr. James D. Stocker
Ms. Ruth C. Strosnider
Dr. Rita Stuever
Ms. Brenda Sullivan
Mrs. Anne Symchych
Mrs. O. F. Tate
Mr. Jeremy Taylor
Mrs. Mary Kay Teel
The George Foundation
Mr. Brooke Thompson
Mr. and Mrs. William R. Thurston
Ms. Pam Tibbetts
Mr. James Tibensky
Mr. Paul H. Todd, Jr.
Mrs. Sally S. Tongren
Ms. Robin Tost
Ms. Marana W. Tost
Mr. Dennis H. Truesdale
Dr. Patricia Turner
Mr. Gary M. Uglesich
Alan J. Underberg
Ms. Daphne Urquhart
Ms. Marian VanBuren
John C. VanBuskirk, Jr.
Mr. William P. VanEseltine
Mrs. Zophar P. Warner and Family
Mrs. Janet Weatherbe
Ms. Marion C. Weber
Mr. Robert C. Wei
Ms. Bernice Graham Weinstein
Dr. Paul C. Weir
Mr. E. F. West
Mr. and Mrs. Owen Whitby
Mr. Joseph Whitcomb
Mr. Howard C. Wilkinson
Mrs. Edward P. Williams
Dr. Robert C. Williams
Ms. Caissa Willmer
George and Leigh C. Wood
Ms. May R. Wrazen
Ms. Mary P. Wright
Mr. and Mrs. Stephen C. Wyer
M. Catherine Yerzley
Mr. Harvey M. Young
Ms. Peggy Ziemer
Ms. Cindy Zylkuski-Norris

CORPORATE SPONSORS

Agway, Inc.
Animal Supply Company
Aspects, Inc.
Audubon Park Company
The Bird Feeder
The Birding Company
Cedar Works, Inc.
Heritage Farms Div.(Century Tool & Manufacturing Co.)
County Line Limited
D & D Commodities, Ltd.
Delavan Foundation
Droll Yankees, Inc.
Duncraft
Edison Electric Institute
Exxon Corporation
F. M. Browns Sons, Inc.
Gnomon Copy
Gutwein & Company
Heath Manufacturing Company
Hyde's Birdfeeder Co.
K-Feeder Enterprises, Inc.
Knight Seed Company, Inc.
Kowa Optimed, Inc.
Lebanon Seaboard Corporation

Mark Feldstein & Associates, Inc.
NatureCraft
Perky-Pet Products
R. Davis Cutting Family
Southern States Cooperative
Swarovski Optik North America
Vari-Crafts, Inc.
Wagner Bros. Feed Corp.
Wegman's W-Pets
WildBills (Invisible Fence Co., Inc.)
Wild Bird Marketplace
Wild Birds Unlimited, Inc.
The Williams Companies

CORPORATE MATCHING GIFTS

AMP, Inc.
ARCO Chemical Company
AT&T
Abbott Laboratories
Aegon USA, Inc.
Aetna Foundation
Air Products & Chemicals, Inc.
Albertsons
Allied Signal Foundation
American Express Foundation
American Home Products Corp.
American National Can Company
Ameritech Services, Inc.
Amoco Foundation, Inc.
Autodesk, Inc.
BP America, Inc.
Bankamerica Foundation
Bankers Trust Company
Barclays Global Investors
Baxter Allegiance Foundation
Bell Atlantic Corporation
Bellsouth
Boise Cascade Corporation
Bristol Myers Squibb Co.
CIGNA Foundation
CNA Foundation
Cabot Corporation
Foundation Company
Caterpillar Foundation
Central Carolina Bank & Trust
Champion International Corp.
Chase Manhattan Bank
Cheesbrough-Pond, Inc.
Chevron U. S. A.
Chrysler Corporation
Citibank, N.A.
Coca-Cola Foundation
Con Edison Co. of New York
Conrail Matching Gifts for Educational Program
Consolidated Natural Gas
Consumers Power Company
Corestates
Corning Glass Works Foundation
Delta Airlines Foundation
Donnelley & Sons Co. R. R.
Dow Chemical U. S. A.
Dow Jones & Company
Eli Lilly & Company Foundation
Ethyl Corp.
Exxon Educational Foundation
Federal National Mtg.
Fidelity Investment Foundation
First National Bank of Dryden
Ford Matching Gift Program
Fort James Foundation
Friends 3M Matching Gift Co.
Friends Cray Research Foundation
Friends Ford Motor Company
Friends Hambrecht & Quist, Inc.
GTE Corporation
Gannett Foundation
General Electric Foundation
General Mills Foundation
Georgia-Pacific Corporation
Government Employment Insurance Co.
Guidant Foundation
Harris Bank Foundation
Hershey Foods Corp.
Hoechst Celanese Corporation
Hoffmann LaRoche, Inc.
Home Savings of America
Household International
IBM Corporation
Industrial Bank of Japan, Limited
Intel Foundation
International Paper Co., FD.
John Hancock Mutual Life Insurance
Johnson and Johnson
Johnson and Johnson Family of Companies
Johnson Controls Foundation
Lockheed Martin Corporation
Lucent Technologies
Maritz, Inc.
McDonnell Douglas Foundation
McGraw Hill Companies Foundation, Inc.
Merck Company Foundation
Merrill Lynch & Co. Foundation, Inc.
Microsoft Corporation
Millipore Foundation
Minerals Technologies, Inc.
Mobil Foundation, Inc.
Morgan Guarantee Trust Co. of NY
Motorola Foundation

TIM GALLAGHER

Two Nest Box Network participants remove a blackbird from a mist net during a special bird-banding workshop at the Lab.

JEAN LEMEIRE

New technologies developed by the Lab's Bioacoustics Research Program to monitor whales will soon allow us to track migrating birds remotely, using computers programmed to recognize the birds' unique nocturnal flight calls.

Mr. Philip Morris
Mr. A. James Brinkerhoff
Mr. Michael Chmielewski
Mrs. Eve S. Edwards
Ms. Barbara Adamson
Mutual of New York Foundation
NBD BankCorp, Inc.
NYNEX Corporation
Nationsbank, Corp.
Nationwide Foundation
New York Life Foundation
New York Stock Exchange FD
New York Times Foundation, Inc.
Niagara Mohawk Foundation
Northern Telecom, Inc.
Norwest Foundation
OSRAM Sylvania, Inc.
PCWorld Communications, Inc.
PPG Industries Foundation
Pennzoil Company
PEW Charitable Trusts
Pfizer Incorporated
Pharmacia & Upjohn Foundation
Pitney Bowes
Principal Financial Group Foundation
Procter & Gamble Company
Prudential Insurance Co.
RJR Nabisco Foundation
Raytheon Company
Rhone-Paulenc Roer, Inc.
Rockwell Int. Corp. Trust
Rohm and Haas Company
Ryder System, Inc.
Scripps Howard Foundation
Shell Companies Foundation, Inc.
Smithkline Beecham Foundation
Southern California Edison
Sprint Foundation
St. Paul Companies, Inc.
State Farm Companies Foundation
Stride Rite Charitable Foundation
Sun Microsystems Foundation, Inc.
Tandy Corporation
Tenneco, Inc.
Texaco Foundation
Texas Instruments Foundation
The Boeing Company
The Dana Corporation Foundation
The Williams Company
The Xerox Foundation
Time Warner, Inc.
Toyota Motor Corp.
US West, Inc.
USAA Matching Gift Co.
United Technologies
Wisconsin Electric System Foundation, Inc.
Zurn Industries, Inc.

FOUNDATIONS AND OTHER CONTRIBUTORS

Anonymous Foundation
Nelson B. Delavan Foundation
The Johnson Family Foundation
National Fish & Wildlife Foundation
National Science Foundation
New York State Natural Heritage Trust
The Florence and John Schumann Foundation
C. H. Stuart Foundation Trust for Mutual Understanding

GIFTS IN MEMORY/ HONOR OF

Egbert Bagg IV
Mildred Brommer
E. Geraldine Carman
Dr. Walter Collins
Gary J. Dunton
T. Spencer Knight
Irma Neuman
Alice Planck
Louise Proskine
Mary Jane Schneider
John Sherwood
George Suci
John (Jack) Thomson
Caroline Whiteside
Jane Hance Wood
Sylvia Hykes Reebel

GIFTS IN KIND

E. H. Barnett
Cellular One
Muriel Doebler-Glaser
Golden Books
Oliver Hewitt
Homestead, Division of Gardner Equipment
Houghton Mifflin
Muriel Horacek
Joseph Sears Lovering, Jr.
Alfred Maley
The MathWorks, Inc.
Mr. and Mrs. Hugh McTeague
Sennheiser Electric Corporation
Robert Stragnell
Swarovski Optik North America
Video Research
Mr. and Mrs. Robert Wilkinson
Mr. and Mrs. William Whyte

BEQUESTS

Estate of Ralph G. Albrecht
Estate of Ms. Elizabeth Todd
Estate of Phyllis Henney
Estate of Robert Nagler
Estate of Mildred Neff

GIFTS FOR SPECIAL PROJECTS

Anonymous
Mr. Ken Bassett
John F. Carver
Mr. James L. Craig
Curtis S. Johnson
Mr. H. Fisk Johnson
Helen Johnson-Leipold
Winifred Johnson-Marquart
Samuel C. Johnson
Thomas Knight, Jr.
Mrs. Judith L. O'Neale
George B. Reynard
Bob Righter
Albert Schreck
Jeffery Sherwood
Mr. and Mrs. Leroy Sloan
Ms. Mary Beth Sollins
Sally Spofford
David Stemple
Mr. and Mrs. Charles E. Treman, Jr.

Thanks to all of our members—too many to list here—for their help and support.

1997-98 FINANCIAL REVIEW

(July 1, 1997, through June 30, 1998)

A strong show of support from generous members and granting agencies enabled the Lab of Ornithology to end fiscal year 1997-98 in the black. Of special note:

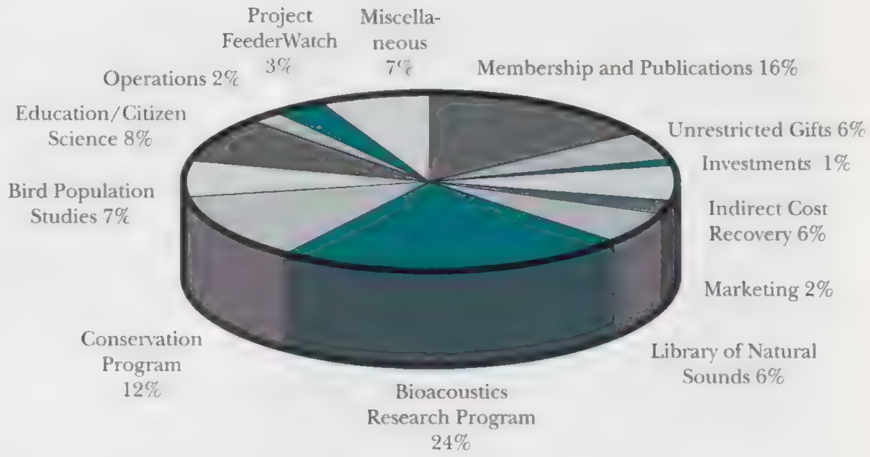
- Gifts from 20,000 Lab members provided the core support for all Lab programs. Membership income accounted for 22 percent of all revenues, a 5 percent rise over the previous year.
- Restricted income for Lab programs, mostly through grants and special gifts, exhibited substantial growth as well, most notably in the Bioacoustics Research Program, Conservation, and Citizen Science/Education.
- Revenues from endowments, reflected as part of program income, have become a significant source of Lab funds. Endowment revenues increased from $183,000 in 1994 to $351,000 in 1998, a rise of nearly 200 percent.
- In November of 1997, we outsourced our retail birding shop to Wild Birds Unlimited, and we boosted wholesale and bird slide efforts. These two changes put an end to the financial drain of our own retail operation, resulting in net sales of $25,000.
- To accommodate our expanding programs, we purchased and installed a double-wide office complex at a cost of $95,172.
- The excess revenues over expenses, $8,850, were added to our small, but vitally important reserve fund. This fund is earmarked for emergencies and to provide bridging funds for research projects when grants are not renewed.

The Lab's successes in 1997-98 were a tribute to all Lab members and friends. Thanks to all of you for your unfailing and enthusiastic support.

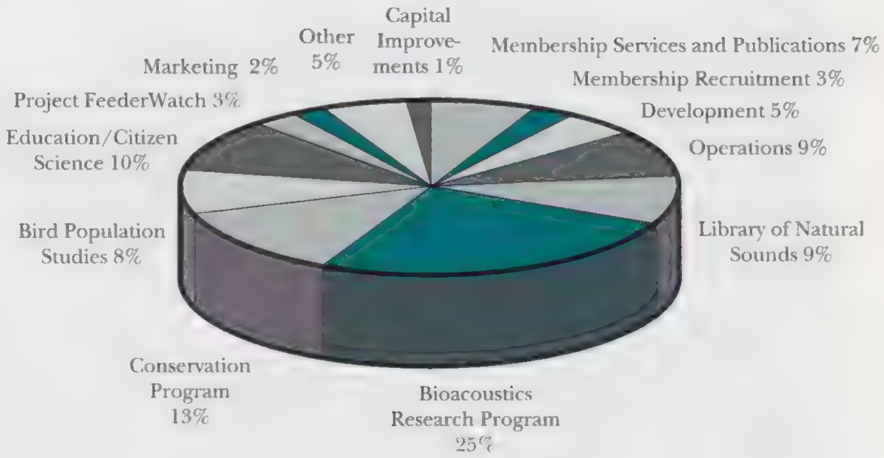
— Scott Sutcliffe, Associate Director

	July 1, 1996– June 30, 1997	*July 1, 1997– June 30, 1998*
Income		
Membership and Publications	$ 921,535	$990,903
Unrestricted Gifts	350,681	346,807
Investments	95,754	66,581
Indirect Cost Recovery	281,106	410,110
Marketing (gross sales)	394,517	159,040
Library of Natural Sounds	448,993	375,510
Bioacoustics Research Program	828,258	1,508,290
Conservation Program	211,921	784,511
Bird Population Studies	392,089	431,546
Education/Citizen Science	360,631	525,670
Operations	245,393	146,831
Project FeederWatch	162,616	213,234
Miscellaneous	121,496	462,666
Total	**$4,814,990**	**$6,421,699**
Expenses		
Membership Services and Publications	$ 455,008	$ 452,992
Membership Recruitment	107,354	167,263
Development	170,775	298,670
Operations	611,555	569,020
Library of Natural Sounds	549,921	567,444
Bioacoustics Research Program	966,847	1,619,018
Conservation Program	222,592	829,700
Bird Population Studies	459,265	500,364
Education/Citizen Science	452,987	623,556
Project FeederWatch	161,260	190,554
Marketing	417,543	134,531
Other	86,603	364,565
Capital Improvements	0	95,172
Addition to Reserve Fund	153,280	8,850
Total	**$4,814,990**	**$6,421,699**

Income



Expenses



THE SPARROWS OF SABLE ISLAND

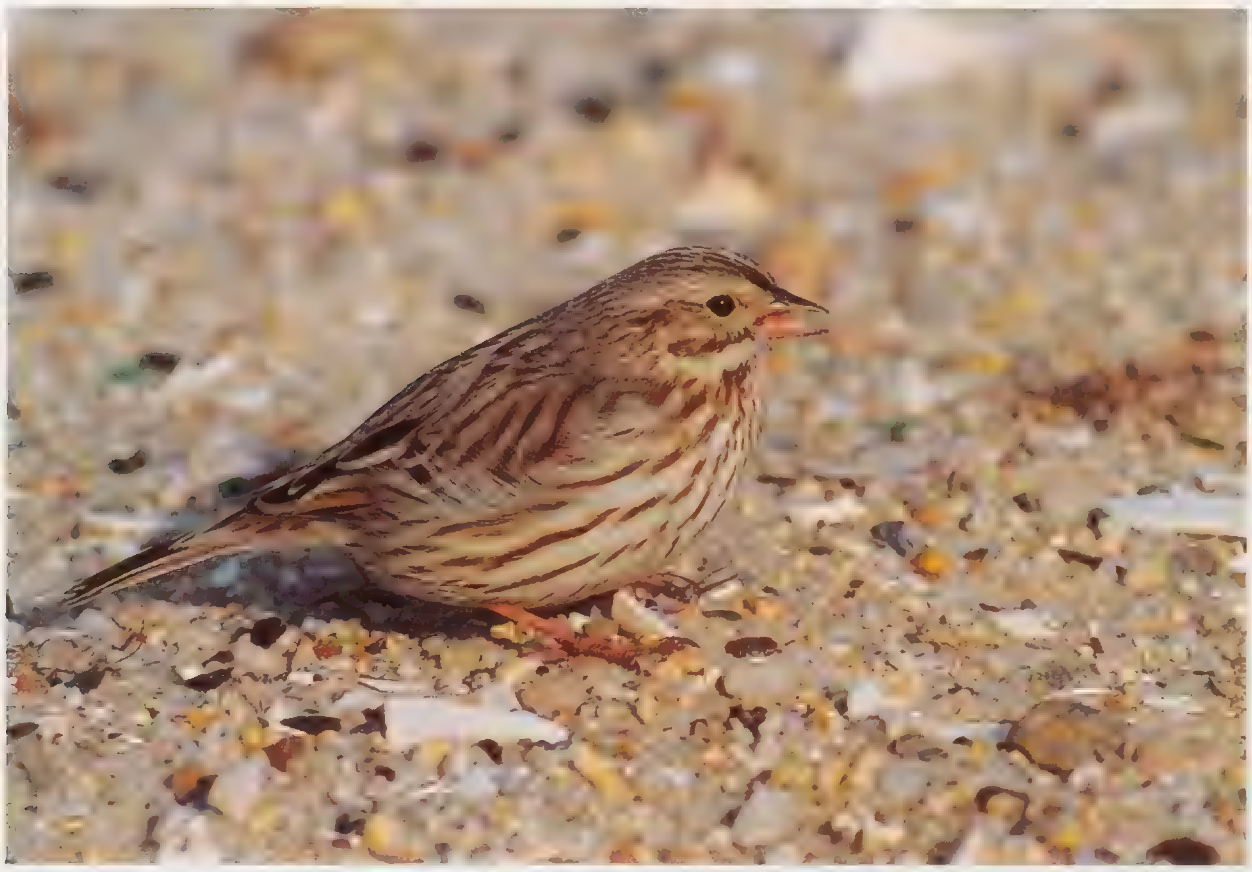
By *Jack Connor*

These birds would have fascinated Darwin

Pull on your thickest gloves, yank your hat down over your ears, and take a walk along an Atlantic Ocean beach on a cold, clear day this winter. If you're alert and persistent, and the wind doesn't blow your binoculars over a sand dune, you might spot one of the most intriguing of North America's birds, one that would have fascinated Charles Darwin, had he been lucky enough to encounter it.

Stay out by the wrack line and away from the trees and shrubs. The colder and emptier the land, the more swirling the sand, the better your chances. You are looking for a pale creature of the open beach, a bird that scampers here and there like a winter ghost crab, and you must keep your eyes sharp. Even on the best day, you won't see many. Only about 1,000 "Ipswich" Sparrows—a distinctive race of Savannah Sparrow—exist in the world, and they scatter very thinly down the coast each winter, from Nova Scotia to Georgia.

The name is an accident and, like Philadelphia Vireo and Connecticut Warbler, misleading. The first specimen recognized by science was shot in the vicinity of Ipswich, Massachusetts, in 1868, but Ipswich Sparrows occur on the New England coast only as migrants or winter visitors. "Sable Island Sparrow" would make a much more appropriate name, because it has since been discovered that Sable Island, Nova Scotia—a 20-mile-long sliver of land out in the windy Atlantic, 60 miles offshore—is the homeland of the entire population. Virtually all breeding adults return to the island each spring to nest. A few tough individuals even survive on the bleak, treeless island year-round.


TOM VEZO

The Ipswich race of Savannah Sparrow breeds nearly exclusively on Sable Island—a 20-mile-long sliver of land off the Atlantic coast of Nova Scotia.

Had the *HMS Beagle* stopped there on its 1831-1836 trip around the world, Darwin might have had an easier time working out his theory of evolution and Sable Island might today be as famous as the Galápagos.

Legend has it that Darwin first conceptualized his theory in 1835 after encountering several of the birds we now call Darwin's finches, the 14 species that live and nest in different combinations on the two dozen islands of the Galápagos archipelago, 600 miles off the coast of South America. Supposedly, Darwin took one look at the little brown birds picking among the seeds at his feet and realized they had all descended from individuals of a single ancestral species that had wandered to the islands from the mainland. In actuality (as Jonathan Weiner detailed recently in his wonderful book, *The Beak of the Finch*), Darwin had trouble distinguishing the birds from one another, collected them carelessly, and didn't grasp their significance until years after the trip ended. And who can blame him? Even today, more than 160 years after Darwin's trip and nearly 140 years after the publication of *The Origin of Species*, the finches of the Galapagos Islands remain enigmatic—despite their frequent appearance in biology textbooks as classic examples of natural selection in action. We can see many Darwinian themes in their lives—how accidents and isolation sometimes lead to speciation, for example, and how different habitats select for different characteristics—but the diversity of the 14 species makes sorting out their taxonomy and evolutionary history difficult. In particular, the identity of the common ancestor of all of them, the mainland finch that first crossed the ocean and survived to breed on the islands, remains unknown. Too many millions of years have passed since that original colonization; too much evolution has occurred.

Sable Island rose from the sea much more recently than the Galápagos, and the evolutionary history of its one native landbird is much simpler: a single island, a single isolated population of sparrows, and an obvious mainland ancestor—the Savannah Sparrow, *Passerculus sandwichensis.*

Best of all, from the birders' point of view, evidence of natural selection can be seen clearly by anyone with a pair of binoculars who has some experience with mainland Savannah Sparrows. Your first impressions of an Ipswich will be how large and how white it is: Sable Island's sparrows are heftier, prettier birds than their dinky and dark continental relatives. Apparently, they illustrate both Bergmann's Rule, the tendency of animals to be larger in the colder areas of their range, and Gloger's Rule, the tendency of animals to be paler in the less humid and colder areas of their range. In any case, they certainly illustrate Darwin's principles in action. Mother Nature breeds for different traits in sparrows on a windswept, offshore island than she does in sparrows that occupy greener, more protected lands. The original colonizers of the island came from those greener lands, but centuries of selection—conducted by ice storms, sand storms, salt spray, Atlantic winds, and Peregrine Falcons—have changed their descendents so that they now look and behave differently than mainlanders.

Researchers, including I. A. McLaren and his former students W. T. Stobo and H. A. Ross, have found that Ipswich Sparrows show a much stronger home-site fidelity than do Savannahs nesting on the continent. Young Savannah Sparrows regularly wander away from their fledging areas and nest hundreds of miles from the area where they were hatched. Not so Ipswich Sparrows. Like seals, sea turtles, and other migrating islanders, Sable Island's sparrows nearly always return to their homeland to nest.

Darwin would note that such fidelity seems evidence of a secondary trait being selected by nature. Larger, paler sparrows attempting to nest away from their odd homeland must put themselves at a competitive disadvantage to their small, dark relatives who are better adapted to the shrubs, trees, and greener habitats of the continent. Apparently, a large body and pale plumage help on Sable Island and hurt elsewhere. So, home-site fidelity is tied to the other "Ipswich" features.

A few of the Sable Islanders do try to buck the odds and breed onshore, however, perhaps because nest sites on the island are limited. Observers conducting breeding bird surveys along the Nova Scotia coast have occasionally spotted Ipswich Sparrows paired with Savannahs. I haven't been able to find information about the nesting success of these partners, but the birds' willingness to interbreed demonstrates that the divergence between the two populations has occurred relatively recently. Darwin would call the Ipswich "an incipient species," a population on its way to becoming something else but not quite there yet. Like some of the Galápagos finches, they have not yet developed a full set of "isolating mechanisms," components of their mating behavior that would prevent them from interbreeding.

Whether the sparrows of Sable Island will survive long enough to become a "full species" seems to depend on the long-term future of their homeland, and a glance at a map of Canada suggests the odds are not promising. Out in the fierce Atlantic all by itself, the island looks like a flattened comma on an empty blue page. Geologic studies report that various kinds of sand seem to be the basic components of the island and how they came together there so far out on the continental shelf is something of a mystery. Some early observers believed the island moved, drifting across the ocean, as barrier islands do, blown from here to there. More recently, researchers have noted that the apparent movement was due to mapping errors, but looking at the tiny island on a map, it's easy to understand.

The sparrows of Sable Island cling to existence in their wind-blown homeland and may not survive another millennium. In the meantime, we can search for them on this side of the ocean and appreciate their hardiness and adaptability.

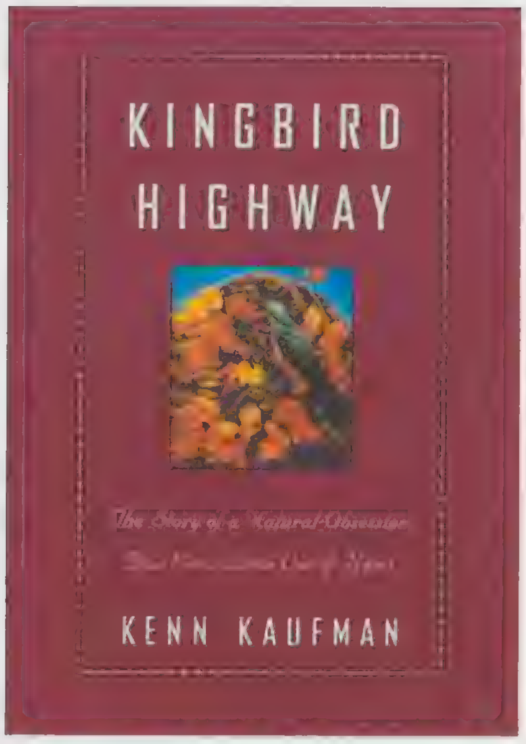
Just hang on to your hat. ■

Before the next flight, upgrade to first class.

If birding has become a lifetime pursuit, consider binoculars worthy of your commitment. LEICA's unmatched combination of legendary optics, ergonomics, and field reliability elevate you to the pinnacle of performance. With light gathering abilities that extend your birding day. LEICA, field mark of the serious birder. Call toll-free for the dealer nearest you.

LEICA
The Optical Advantage
1-800-222-0118
Leica Camera Inc., 156 Ludlow Avenue, Northvale, NJ 07647 © 1999 Leica Camera Inc

Critics' Corner



KINGBIRD HIGHWAY

KENN KAUFMAN

KINGBIRD HIGHWAY

by Kenn Kaufman

Boston: Houghton Mifflin; 1997;
Cloth, 318 pages, $23.00.

I first read Kenn Kaufman's *Kingbird Highway* a year and a half ago on a trip to Churchill, Manitoba. It was such a compelling story, I knew immediately that I had to review it. Although I run the risk now of being the last reviewer in America to cover this book, *Kingbird Highway* is too good to pass up. It's a cut above anything written so far by an American birder and will surely be regarded as a classic in future years.

Kingbird Highway tells the tale of how, at age 16, Kenn Kaufman dropped everything and hit the road in search of birds. It's a remarkable story. There he was: honor student; president of the student council—obviously a gifted kid with a bright future in college. But his overwhelming yearning to learn everything he could about birds could not be suppressed or even postponed. He dropped out of school and began hitchhiking back and forth across the continent, searching for birds and adventure.

"I knew that, back at home, kids my age were going back to school," wrote Kaufman. "They had the clang of locker doors in the halls of South High in Wichita, Kansas. I had a nameless mountainside in Arizona, with sunlight streaming down among the pines, and Mexican songbirds moving through the high branches. My former classmates were moving toward their education, no doubt, just as I was moving toward mine, but now I was traveling a road that no one had charted for me . . . and my adventure was beginning."

Kaufman learned to survive on pennies (he budgeted himself only one dollar a day for food). He sold blood plasma twice a week, for five dollars a pint. He went to temporary employment agencies and would work by the day, until he had $50, then hit the road again. Sleeping outside in all kinds of weather, finding shelter under bridges and overpasses, he followed his unstoppable desire to find birds and learn more about them. He even started eating cat food: "a box of Little Friskies, stuffed in my backpack, could keep me going for days," he wrote.

Besides being a great coming-of-age book and a road-adventure yarn, *Kingbird Highway* provides a remarkable insight into a transitional era in American birding—the early 1970s. At the beginning of that decade, no one had yet reached the 700-species mark in their North American life lists—in fact, only the best birders had passed the 600-species mark. And the record for the most birds seen by a birder in a single year had stood at 598 since 1958, when ace British birder Stuart Keith completed his record-smashing North American big year.

In terms of the up-to-date information available for birders, many things had changed by 1971. Informal hotlines had begun springing up across the country. New bird-finding books, such as Jim Lane's guides, were providing intricate instructions on how to find birds in various regions. And, at some birding hotspots, taped telephone messages were providing weekly updated information on rare birds seen locally to anyone who called.

With this budding network of bird-information sources, a new big-year record was there for the taking. And Kaufman wanted desperately to be the one to achieve it. He made his first try in 1972, but barely a month into his big year, he found that the record had already been topped by another boy wonder, Ted Parker, who had seen an incredible 626 species in 1971.

Kaufman's great adventure began in earnest on New Year's Day, 1973, when he tried once more to begin a big year, setting his sights firmly on Ted Parker's record. But it turned out that he was not the only one with that thought in mind. For the entire year, he had to compete toe-to-toe with Floyd Murdoch, a graduate student who got to travel to wildlife refuges all over the country to get information for his doctoral dissertation (and amass bird sightings). I won't tell you who won—in some ways, it doesn't matter. As Kaufman discovered in his lengthy travels, the journey is far more important than the destination.

Kingbird Highway was a great surprise to me. Though I've always considered Kenn to be a good writer, and everything I've read of his has been excellent, journeyman work, *Kingbird Highway* is something more. In this book he not only captures the soul of birding but also the spirit of youth. The writing is lyrical, bordering on poetry at times. I hope that Kenn writes many more books of this kind in the years ahead.

—Tim Gallagher

HAWKS IN THE HAND

by John and Frank Craighead

New York: Lyons & Burford; 1997;
cloth; 352 pages; $40.00.

First published in 1939, *Hawks in the Hand* was one of my favorite books growing up. Reading it (again and again) definitely fueled my passion for birds of prey and inspired my interest in bird photography. It's good to see this fascinating book in print again, now that most copies of the original edition have long since vanished from libraries and used book shops.

HAWKS IN THE HAND

Adventures in Photography and Falconry

FRANK AND JOHN CRAIGHEAD

Although twin brothers Frank and John Craighead are perhaps most renowned now for their work studying grizzly bears in the Yellowstone region, they began their scientific careers as ornithologists. Indeed, their 1956 book, *Hawks, Owls, and Wildlife*, was a seminal work in the field of raptor ecology, examining in detail the intricate relationship between predatory birds and their prey. But long before they became professional biologists, the Craigheads were studying, photographing, and writing about birds of prey. They were audacious enough, while still in their teens, to submit an article and photographs to *National Geographic* magazine—and it was published. The recognition they received from the article led to commissions for more articles and eventually to the publication of *Hawks in the Hand.*

It is interesting that *Hawks in the Hand* was reissued in the same year that *Kingbird Highway* was published. In some ways, the books have a lot in common. They are both, in a sense, coming-of-age stories about young Americans who have an overriding passion for birds—a passion that they follow unbridled, crossing and recrossing the continent to study birds. And yet the birding travels that the Craigheads and Kaufman took occurred more than 30 years apart.

It was a vastly different world in the 1930s. At that time, a native population of Peregrine Falcons still nested across the East, and the Craigheads visited many of their eyries, photographing the eggs, young, and adults—decades later this would provide vital documentation on numerous traditional falcon eyrie sites that had been lost due to DDT and other environmental contaminants. But all was certainly not well in those times. In a poignant 1933 entry in the boys' journal (which was added to this edition), they described an autumn day spent at Cape May, New Jersey. Unlike most fall days now, few bird watchers were present to witness the spectacular stream of migrating hawks flying past. Instead, scores of hunters stood shoulder to shoulder, shooting at every raptor that flew over them. "Shells were piled all over the road and hawks were piled all over the running boards of cars and scattered throughout the woods, for no one bothered getting a hawk that fell anywhere but in the road," they wrote. "It seems a crime that they should be so slaughtered."

The equipment available for rock climbing and photography was also much different from what's available today. You won't see any helmets, carabiners, or fancy synthetic climbing ropes in this book. These guys rappelled down sheer cliffs, dizzyingly high above the ground, using ordinary manila ropes to reach falcon nests, or climbed massive tree trunks with telephone lineman spurs to reach Bald Eagle or hawk nests. One day, some nervous spectators, who were viewing the Craigheads climbing to a Peregrine Falcon nest on a lofty cliff, called an ambulance, which parked below them for the entire time they were there. Frank joked, "To heck with them. If we fall, a broom is what we'll need, not an ambulance." And for all their photography, they used 4x5 press cameras—which are about as heavy, awkward, and unwieldy as you can get—but the pictures they took were great.

When I read this book again recently—for the first time in 25 years—I was amazed how well it held up.

— Tim Gallagher

CLARK'S GREBES BY JEFFREY RICH

Looking for a great bird slide?

The Cornell Lab of Ornithology has a vast collection of excellent bird slides, available individually or in specially priced sets. Use our slides to fill gaps in your own slide shows or purchase complete sets, some of which include written scripts or taped narrations and bird sounds. Photographs are also available for commercial use. Write today for our free catalog or visit our web site at http://www.birds.cornell.edu.

CORNELL LAB OF ORNITHOLOGY
159 Sapsucker Woods Road, Ithaca, New York 14850
Phone: (607) 254-BIRD e-mail: djw16@cornell.edu

The Catbird Seat

BIRDING PRODUCTS FOR THE 21ST CENTURY

By Pete Dunne

I don't know whether you've noticed it, but it seems like every hobby (except birding) boasts a cornucopia of products designed to meet every avocational need. Go to any garden, boat, or hunting and fishing show, and you'll find an array of stuff enthusiasts can't live without that mantles entire city blocks.

Maybe birding hasn't been around long enough for entrepreneurs to sniff out the market. Maybe those people who have raised the cost of catching a largemouth bass to $190 per inch feel that birders don't want or need anything but binoculars and a field guide.

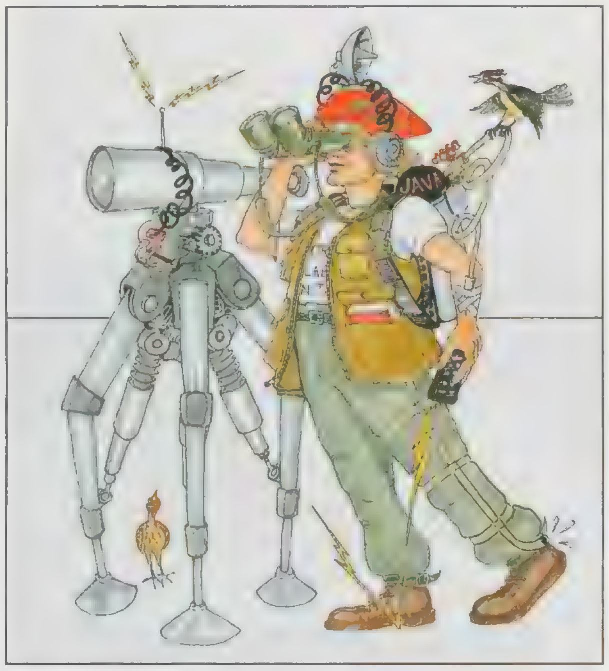
But maybe product analysts just lack insight. So here, for the benefit of investors, venture capitalists, and (ultimately) those of us who will buy all of these toys, are my ideas for products that birder's can't live without. Products like: a corrective lens that fixes the blurring you get every time you look at a bird though a car windshield. Just slip the frame over the objective lenses of your binoculars (or, in the contact lens version, over the ocular lenses) and BINGO—the blur is gone!

Because windshield curvature varies between auto makes and models, it stands to reason that lenses will require a prescription. This is good because when you find yourself in a situation where you need to fall back on the classic excuse that you "didn't get a good enough look at the bird because you were looking through the windshield," you can instead say that you need to get your prescription changed.

Speaking of binoculars, one option I know that every birder will want is a "temporal adjustment knob"—a fixture that will let you set the image back to that moment when the branch (which is still vibrating) held the bird that, according to smug witnesses, "just flew."

Or, how about a filter that will automatically block out Herring Gulls at Niagara Gorge, Snow (but not Ross's) Geese at Bombay Hook, or Yellow-rumped Warblers at Cape May?

How about a binocular barrel with a hinge—so that aging birders can look up without craning their necks skyward. I'm talking about a product that could wipe out warbler neck in our lifetime.



Something that frustrates me is the frequency with which field guides need replacing. Every time the checklist committee of the American Ornithologists' Union adds a hyphen, my field guide becomes stale-dated. So, why not market a "field guide conversion kit"—an adhesive-backed box filled with an assortment of hyphens that can be affixed to the inside cover of a field guide?

Then, if Eyebrowed Thrush is ever changed back to Eye-browed Thrush, I can just reach into the box, extract a hyphen, and insert it in place (instead of buying a new book). Or, if Common Black-Hawk ever reverts back to Common Black Hawk, I can remove the hyphen and store it in the box.

Certainly every birder will want the walk-along tripod—a product that uses robotic technology to keep up with you (instead of having to be carried around like a cranky two-year-old). Deluxe models could be programmed to meet you at the mud flat.

The big day is, of course, fertile ground for product development. It is here, at birding's fringe, that human limits cry out for the sort of technological leverage that will shave time (and save vehicles).

To this end, I offer two products that will revolutionize the big day. First: a self-leveling dashboard that will keep coffee levels stable during hard cornering, making it finally possible for big-day birders to ingest more coffee than they wear.

Of course, drinking all this coffee will present another problem. It will mean that big-day birders will have to stop more frequently to divest themselves of processed coffee—a time-consuming and counterproductive business.

Which is why some surgical instrument concern should hasten production of the Big Day Birding Catheter—a simple, sanitized tube that will tap kidneys working as hard as you are. Custom-fitted to run the length of the user's leg, the tubes will have a lever-controlled nozzle that may be switched to the open position when team members leave the vehicle or, between stops, hooked up to a mainline running through the car, allowing members to passively divest themselves of processed coffee between sites.

Deluxe models might come with their own I.V. coffee drips—with lines color coded for obvious reasons. Prescription required. Read instructions before using. FDA approval pending—and not at all certain. ■

ILLUSTRATION BY JEFF SIPPLE

© Tom Vezo

The Brandon Master Birder Spotting Scope

$995 or $595 - NOW YOU HAVE A CHOICE!

Our Deluxe 80mm BRANDON MASTER BIRDER with 2-inch super-wide 15X eyepiece and huge erecting prism is still $995 ppd. In addition, we have just introduced our Standard 1¼-inch version with 20X and 40X eyepieces for only $595 ppd.! (With 20X to 60X zoom eyepiece, $695 ppd.) Yes, it's the same 80mm triplet lens and 2-inch deluxe focuser.

Standard 80mm Brandon Master Birder

So, whether you buy factory-direct or from your favorite dealer - now including all Wild Birds Unlimited® stores - you have a choice of the two best selling American-made spotting scopes available.

- Unique Amici prism provides three-dimensional view unlike any other scope on the market, with no vignetting.
- Phenomenal eight-foot minimum focus distance for studying fine feather detail up close on birds.
- Tack sharp wide-angle view and long eye relief, no need to remove eyeglasses.
- Camera adaptable in seconds for full-frame photographs.
- 80mm f/5.6 triplet lens design with state-of-the-art multicoated lenses provides a bright image, even in low light.
- Black rubber, moisture-resistant armor coating. Free deluxe vinyl carrying case.

VERNONscope & Company

5 Ithaca Road, Candor, New York 13743
Phone: (607) 659-7000 Fax: (607) 659-4000

LIVING BIRD

For the Study and Conservation of Birds

SPRING [illegible]

SAPSUCKERS' DELIGHT

Clockwise from top John Fitzpatrick, Ken Rosenberg, Steve Kelling and Kevin McGowan

The "Sapsuckers" birding team from The Cornell Lab of Ornithology, Ithaca, NY, <www.birds.cornell.edu> knows optics. Optics define their birding and wildlife observations. They even publish evaluation studies covering binoculars or spotting scopes in the lab's magazine "Living Bird". They consider all good optics. Some are very good; others are even better.

For their personal and professional use, they use Swarovski HD spotting scopes and 10X50 SLC binoculars. According to team members, "The brilliant resolution, image contrast, brightness, rugged waterproof integrity and overall performance of Swarovski optics are generally superior to any other brands we have tested. Also, the Swarovski Optik Limited Lifetime Warranty* and speedy repair service is the very best. Check it out."

Now don't just accept the "Sapsuckers' Delight" as gospel truth. Visit your nearest Swarovski Optik dealer and see for yourself or ask a friend who owns a Swarovski spotting scope or binocular. Call 800-426-3089 or visit **www.swarovskioptik.com**

SWAROVSKI
OPTIK
1949-1999

With The Eyes of a Hawk

LAB'S MASCOT

*Original warranty card must be postmarked within 30 days of purchase from an authorized Swarovski dealer in good standing. Entire product must be returned with warranty claim by registered warranty holder.

Swarovski Optik North America, Ltd.
One Wholesale Way, Cranston, RI 02920

A Publication of the
Cornell Laboratory of Ornithology

LIVING BIRD

SPRING 1999 VOLUME 18 NUMBER 2

GREETINGS FROM SAPSUCKER WOODS

There comes a time in the production of every issue of *Living Bird* when the deadline approaches, and I know that I must soon hand all of the manuscripts and photographs to Kat Dalton, our designer. It's then that I suddenly realize I've got dozens of difficult tasks left to do and only three days to finish them. Crunch time.

I just got past that phase with this issue today. After pulling three late-nighters, working on the final editing of this issue's articles, it occurred to me yesterday that I still needed to write my "Greetings" column and choose a photograph for the table of contents page. As I gazed endlessly at my computer screen, nothing came to mind. I kept writing a paragraph or two and then hitting the delete button.

Suddenly, our publications assistant, Patty Porupski, burst in, just back from her morning walk through Sapsucker Woods. "I saw a screech-owl sunning itself in a nest box next to the boardwalk," she said. "You should take a picture of it."

"I'd like to, but I have to write this column," I said. "And besides, I left my 500mm lens at home."

At that point, Leslie Intemann, *Living Bird* associate editor, peeked out her office door. "What?" she said. "Is this the same person who just wrote the photography column about always being prepared?"

I smiled and then thought: why not? I could really use a break. I drove back home, picked up my equipment, and was back aiming my lens at the owl in 20 minutes. As I watched the bird, I stood still and enjoyed the warmth of the midmorning sun. I knew just how the screech-owl felt as it sat there fluffed out in the sunlight. It's good to be alive . . . good to be here in Sapsucker Woods on this beautiful morning in late February.

Tim Gallagher
Editor-in-Chief

Cover: An adult male Baltimore Oriole perched on a flowering beach plum tree is a welcome sign that spring has finally arrived, breaking the grip of winter in the Northeast. Renowned wildlife photographer Tom Vezo took this pleasing image not far from his home on New York's Long Island.

Right: An Eastern Screech-Owl basks in the morning sunlight at Sapsucker Woods Sanctuary. Photograph by Tim Gallagher.

Back cover: A redbud tree provided a gaudy blaze of background color for this exquisite Long-eared Owl portrait. Photograph by John Hendrickson.

8 MY FRIEND WITH THE GOLDEN PIPES *by Will Nixon*

In the long, gray transition from winter to spring, a tiny brown bird with an exquisite voice was the one source of thrilling beauty.

12 OUT OF ITHACA *by Tim Gallagher*

Local nature photographer Marie Read has gained international fame with her evocative portraits of birds.

20 BIRDING IN PARADISE *by Rachel J. Dickinson*

Exploring the birdlife and beaches of the Bahamas.

28 DESPERATELY SEEKING BINOS *by Ken Rosenberg*

In search of the best and the brightest binoculars for birding.

Departments

4 LETTERS

5 BIRDNEWS

Columns

6 SPOTLIGHT *by David S. Wilcove*
The rarest of the rare.

36 PICTURE PERFECT *by Tim Gallagher*
Beating Murphy's Law.

38 THE CATBIRD SEAT *by Pete Dunne*
Of kids, birds, and model airplanes.

LIVING BIRD

SPRING 1999 VOLUME 18 NUMBER 2

Editorial Staff

Editor-in-Chief: Tim Gallagher
Design Director: Kat Dalton
Associate Editor: Leslie Intemann
Technical Editors: Kevin J. McGowan
Kenneth V. Rosenberg
Publications Assistant: Patty Porupski
Contributing Editors: Jack Connor
Pete Dunne
Mel White
David S. Wilcove
Advertising Manager: Barbara Guttridge

Administrative Staff

Louis Agassiz Fuertes Director
John W. Fitzpatrick

Associate Director
Scott Sutcliffe

Director, Education/Citizen Science
Richard E. Bonney, Jr.

Director, Bioacoustics Research Program
Christopher W. Clark

Director, Bird Population Studies
André A. Dhondt

Director, Conservation Science
John W. Fitzpatrick

Director, Publications
Tim Gallagher

Curator, Library of Natural Sounds
Greg Budney

Curatorial Associate, Systematics & Collections
Kevin J. McGowan

Director, Operations
Carol Pyhtila

Administrative Board

E. Edward Bruce
Peter J. Bruns
Jean W. Douglas
Theodore L. Eliot, Jr.
Jane C. Engel
Mary P. Hines
Bruce S. Howard
Imogene P. Johnson
Mary L. Kiplinger
Frank Y. Larkin
Randolph S. Little
Edwin H. Morgens
Wendy J. Paulson
Olin Sewall Pettingill, Jr.
Frank H. T. Rhodes
Edward W. Rose III
Robert F. Schumann
Carol U. Sisler
Stanley A. Temple
Charles E. Treman, Jr.
Joseph H. Williams
David W. Winkler

Living Bird, ISSN 1059-521-X, is published in January, April, July, and October by the Cornell Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Telephone: (607) 254-BIRD. *Living Bird* is free to members of the Laboratory, a nonprofit, membership organization dedicated to the study, appreciation, and conservation of birds. For more information please write to our Membership Department. Membership is $35 a year. The Laboratory assumes no responsibility for unsolicited photographs or manuscripts.

© 1999 Cornell Laboratory of Ornithology.

Visit our web site at <http://birds.cornell.edu>.

Printing by Brodock Press, Utica, New York.

Printed on recycled paper.

Letters

THE LAST NEST?

In Jeff Marks's response to a question about the Bristle-thighed Curlew's nest in your summer issue's letters page, he states that this species was the only breeding bird in North America whose nest and eggs were unknown to science before 1948. Was not the first known nest of the Marbled Murrelet discovered by a tree surgeon in Big Basin State Park, California, in 1974?

Elizabeth Rush
Los Altos Hills, California

Elizabeth Rush is correct that the nest of the Marbled Murrelet was unknown until 1974. In August of that year Hoyt Foster, a tree surgeon working for the Davey Tree Company, was removing branches from a large Douglas-fir in the Santa Cruz Mountains of coastal California. He found the first known nest of the murrelet on a limb high above ground. Details of the discovery can be found in Binford, Elliott, and Singer, 1975, "Discovery of a nest and the downy young of the Marbled Murrelet," The Wilson Bulletin *87 (3): 303-319. A nest of the Siberian form of the Marbled Murrelet (now recognized as a separate species, the Long-billed Murrelet) had been discovered in 1961 near Okhotsk, Siberia, also in a tree.*

Oddly enough, the egg of the Marbled Murrelet was already known. In 1898, while working off the Alaskan coast in the Prince of Wales Archipelago, George Cantwell collected an adult Marbled Murrelet that contained a complete egg in its oviduct. This was the first known egg of the species. Unfortunately, the egg was partially destroyed in removing it from the carcass. It was preserved at the Smithsonian Institution and can be seen in plate number 48 of Bent's Life Histories of North American Diving Birds. *In 1934 George Miksch Sutton, then employed at Cornell University after finishing his Ph.D., was working in the Strait of Georgia, east of Vancouver Island, British Columbia. He shot a female Marbled Murrelet and from the oviduct of the bird removed an unbroken, perfectly formed, well-marked egg. The bird is in the Cornell Ornithology Collection (catalog number CU#2675), and the egg was deposited at the Carnegie Museum of Natural History in Pittsburgh, Pennsylvania.*

Kevin J. McGowan
Technical Editor

SAVING PRECIOUS HABITAT

I just finished reading "Last Stand in the Arkansas Delta" by John J. Gschwend, Jr., in the Winter 1999 issue of *Living Bird.* What a touching and compassionate story. The men putting their hearts and souls into saving the Red-cockaded Woodpeckers from gradual extinction deserve many thanks. I praise them for their everlasting dedication in saving this very precious habitat for these birds. This article will give people new ambition to help our "feathered friends."

Shana M. Reiley
Theresa, New York

POSITIVE INFLUENCES

I read your review of the reprint of our 1939 book *Hawks in the Hand* with great pleasure (Winter 1999). It's very gratifying for me to know that my brother and I had an influence on a boy's life who later became so closely associated with such a prestigious organization as the Cornell Laboratory of Ornithology. I also greatly enjoyed reading the article about banding Gyrfalcons in Iceland.

Frank C. Craighead
Moose, Wyoming

We welcome letters from readers. Write to The Editors, *Living Bird,* 159 Sapsucker Woods Road, Ithaca, New York 14850, or send e-mail to <livingbird@cornell.edu>.

Building Bridges for Conservation

The American Bird Conservancy recently announced a new initiative called "Conservation Counterparts," aimed at developing working partnerships between bird conservationists in the United States and Latin America.

"Close to one-third of all the world's threatened and endangered bird species are found in Latin America and the Caribbean," says Michael J. Parr, director of program development. "Many migratory species breed in North America but spend the bulk of the year in Central or South America. Bird conservation is truly the responsibility of people from all parts of this hemisphere."

The organization is contacting bird clubs throughout the United States, with the aim of building a support network for Latin American groups and projects. Clubs or individuals who join this effort receive a "Project Profile" and an in-depth proposal about their adopted project. The American Bird Conservancy, which is running this program in cooperation with Partners in Flight, then helps them develop fund-raising ideas and tells them about special matching gift arrangements.

"Some of the projects are supported by the National Fish and Wildlife Foundation, which will give one dollar for every dollar contributed by groups or individuals," says Parr. According to Parr, it is not necessary for a group to take on the responsibility for the entire cost of a project, although he hopes people will contribute as much as possible. "Some projects are already adopted by one or more groups but still need more support," he says. "If you adopt a project, we'll keep you fully updated on its progress, including any special developments. In some cases, we'll also arrange for someone to present an illustrated talk for your group about its adopted project."

A brief sampling of the projects "up for adoption" includes the Quetzal Conservation Project, in Guatemala; Program for Belize Bird Conservation Development, in Belize; River of Raptors, in Vera Cruz, Mexico; Infierno Harpy Eagle Project, in Peru; Save the Dickcissel, in Venezuela; Great Green Macaw Project, in Cerro Blanco, Ecuador; Cerrado Conservation Project, in Paraguay; Bahamas Wetland Project, in the Bahama Islands; and many more.

For more information, contact Michael Parr, American Bird Conservancy, 1250 24th Street NW, Suite 400, Washington, DC 20037; phone (888) 247-3624; e-mail <abc@abcbirds.org>.

On to New Jersey!

The first leaves of spring are just starting to burst from their buds, the migrant warblers are on the move northward, and the mighty Sapsuckers are at it again—working out round the clock in grim preparation for the event of a lifetime: the final World Series of Birding of the Twentieth Century (and of the Second Millennium A.D.), which takes place Saturday, May 15, 1999.

YELLOW-BELLIED SAPSUCKER BY TOM VEZO

Determined to win the competition this year at all costs, the Sapsuckers have been bench pressing heavy scopes and tripods, running up hillsides with three-pound binos hung from their necks, and standing outside shivering as backyard sprinklers rain ice water down on their heads to simulate actual big-day field conditions. Last year, the Sapsuckers took the trophy for best score with an out-of-state team and finished fourth overall. But this year the team—made up, once again, of Lab director John Fitzpatrick, Steve Kelling, Kevin McGowan, Ken Rosenberg, and Jeff Wells—has pledged to win it all.

In case you have no idea what I'm talking about, please allow me to explain: the World Series of Birding is the main event . . . the heavyweight championship—no, the Olympics of big-day birding competitions. Ace birding teams from across North America and beyond will descend on New Jersey and see how many species of birds they can find from midnight to midnight on May 15. (The record is a whopping 227 species logged by an in-state team several years ago.)

But the World Series of Birding is not just about fun and competition. It's also a major fund-raiser for bird conservation groups. Last year, the event raised more than half a million dollars in total, of which $93,000 went to the Lab of Ornithology to support programs in education and conservation. This year, the funds pledged by Lab members and friends will help complete our three-year Cerulean Warbler Atlas Project and launch a similar project aimed at determining the conservation needs of the Golden-winged Warbler.

We hope you'll take part in the fun and help us end the millennium with a bang—all for the benefit of birds. Who knows? You might even win a new pair of Swarovski binoculars. Watch your mailbox for details.

Spotlight

THE RAREST OF THE RARE

by David S. Wilcove

The Madagascar Serpent-Eagle and the dedicated researchers who study it may be two of the world's most endangered species

By the morning of the third day, all I could think of was that old proverb, "Be careful what you wish for, for your wishes may come true." Here we were, three ecologists who for years had dreamed of visiting Madagascar, standing in the middle of the largest, finest expanse of virgin forest left on the island—and it was raining so hard we could barely see the trees in front of us. The first two days of our four-day visit to the Masoala Peninsula had been complete washouts, with steady, hard rains from dawn to dusk. Now, the morning of the third day brought more of the same. Whatever birds, lemurs, or tenrecs might be out there had hunkered down for the duration of the storm. We, on the other hand, were short of time and common sense, so we donned our rain gear, forded a nearby stream, and began slogging our way through the forest, seeing and hearing very little.

That afternoon the downpour subsided to a light rain, and the sun made a feeble effort to burn through the gray clouds. We followed a muddy trail up a steep slope to a forested ridge top, and it was there that we heard the sound—the one like the tape recording: a steady, nasal, goose-like honking.

Scott Robinson turned to Richard Holmes and me and whispered, "That's it, isn't it?"

"It sounds like it," replied Richard.

"Maybe," I added. (I have a poor memory for sounds.)

The peculiar call was emanating from somewhere within the inaccessible, dense forest downslope. Our line of sight was so limited that I had more or less dismissed the possibility of actually seeing the bird to confirm its identity. Thus, Richard's calm pronouncement—"Here it is"—took me completely by surprise. A few nervous seconds later, all three of us were staring at a lanky, long-legged raptor perched beneath the canopy. The brown barring on the underparts, the massive, hooked beak, and the long, shaggy feathers on its nape added up to a Madagascar Serpent-Eagle, one of the world's rarest and most elusive birds of prey. At that moment, all of the rain and mud and frustration of the past couple days were replaced with a feeling of sublime joy.

Today, in my copy of *Birds of the World: A Check List*, the line for Madagascar Serpent-Eagle carries the handwritten inscription "Aug. 29, 1998, Masoala Peninsula." Behind that date, of course, is the story I've just told. But behind *that* story is a far more important one, for which my friends and I can take no credit.

We were visiting the Masoala Peninsula at the invitation of The Peregrine Fund, which maintains an active research and conservation program in Madagascar focusing on several of the island's rarest raptors. The Fund's Masoala "field station" consists of four wooden bunkhouses, a cookhouse, and an outhouse, all clustered around a tiny clearing in the forest. The nearest village is seven kilometers away by foot; the nearest town of any size or substance requires the better part of a day to reach by boat. Electricity, running water, and other luxuries are nonexistent, but

CORINA ROE

Peregrine Fund biologist Russell Thorstrom, center, prepares to enter the rainforests of Madagascar's Masoala Peninsula, traveling by dugout canoe. It was there, in 1993, that he and his team rediscovered the Madagascar Serpent-Eagle—a species that had not been seen alive for more than 50 years.

the opportunity to study birds, mammals, and other wildlife in Madagascar's largest remaining forest has kept a team of scientists—American and Malagasy—busy since the early 1990s. Managing The Peregrine Fund's work in the Masoala Peninsula has been the responsibility of Russell Thorstrom, a quiet, self-effacing ornithologist blessed with uncanny field skills and remarkable stamina and dedication.

Prior to Russell's arrival, the very existence of the Madagascar Serpent-Eagle had been in doubt. Eleven specimens were collected between 1875 and 1935, and a decomposed carcass was found around 1990. But there had been no confirmed records of a live serpent-eagle in more than half a century. The Masoala Peninsula, by virtue of its size and remoteness, looked to be the best place to search for the species. Russell and his team spent more than 100 person-months in the field before logging their first sighting of a serpent-eagle, which took place on November 2, 1993. (And we're not talking about bird watching from the roadside here; finding a serpent-eagle or any rare bird in the Masoala entails hiking miles and miles up and down steep slopes.)

Then, on January 14, 1994, they struck gold when a serpent-eagle blundered into one of their mist nets, enabling the scientists to measure, weigh, and radio-tag it. Armed with new information about the species' behavior and call notes, the researchers undertook an extensive search for serpent-eagles throughout the peninsula. By the end of 1998, they had succeeded in locating 16 individuals at 9 sites. An additional 6 individuals have been reported from 4 sites outside the Masoala Peninsula.

Thus, when Scott, Richard, and I climbed that ridge top on August 29, we did so with the knowledge that a serpent-eagle lived in the vicinity. We recognized the call because we had heard a tape of it the day before, which was the first vocalization of the species ever recorded (and was made by Russell, of course). Our sighting, therefore, reflected not only the two-and-a-half days we had spent in the field, but also the hundreds and hundreds of days logged by other scientists. The three of us were really piggybacking on their efforts.

Along with their studies of the serpent-eagle, The Peregrine Fund team has undertaken the first extensive survey of the avifauna of the Masoala Peninsula and the first in-depth life-history studies of the Madagascar Red Owl, another nearly mythical bird. The discovery of serpent-eagles and red owls in the Masoala was one reason the Malagasy government recently set aside a large portion of the peninsula as a national park. Assuming that the park is adequately funded and protected in the coming decades (a big "if" in a nation as poor as Madagascar), it could become one of the world's most important reservoirs of biodiversity, harboring a fauna and flora that are quite literally irreplaceable.

RUSSELL THORSTROM

Thorstrom made history again in 1997, locating the first Madagascar Serpent-Eagle nest ever found. Above, the young eaglet shortly before fledging.

In recent decades, the field of ecology has become increasingly theoretical and experimental. This is by no means an unwelcome development; to a large degree, it marks the maturation of ecology as a science. But one unfortunate consequence is that basic natural history studies are disappearing for lack of funding and interest—despite the fact that such studies form the empirical foundation for many of our theoretical insights and are absolutely essential for crafting on-the-ground solutions to urgent environmental problems. As Reed Noss, president-elect of the Society for Conservation Biology, has written, "How can we possibly construct, for example, a successful recovery plan for an endangered bird when we lack basic information on such things as what it eats, where it nests, how sensitive it is to edge effects, how far juveniles disperse, and so on? Collecting these kinds of data is not easy. It requires competent field work by careful, well-trained observers who can get by, often by themselves, for long periods in uncomfortable and often treacherous field conditions."

Today, organizations and agencies willing to support basic field studies are few and far between. Even scarcer are the intrepid men and women who are willing and able to do this sort of work. It now occurs to me that the rarest creature we saw in the Masoala Peninsula on that rainy day in August was not the serpent-eagle, but Russell Thorstrom himself. ■

Recommended Reading:

Thorstrom, R. and R. T. Watson. "Avian Inventory and Key Species of the Masoala Peninsula, Madagascar," *Bird Conservation International* 7: 99–115, 1997.

Noss, R. F. "Does Conservation Biology Need Natural History?" *Wild Earth* 8(3):10–14, 1998.

MY FRIEND *with the* GOLDEN PIPES

BY WILL NIXON

In the long, gray transition from winter to spring, a tiny brown songbird with an exquisite voice was the one source of thrilling beauty

I discovered my tin ear in third grade. Cast as a silent guard in the *Mikado,* I sat bored through song rehearsals, waiting for stage rehearsals, when I would finally carry my prop, a black spear with a bronze tip. Made of squeezable rubber, the tip couldn't have done much damage, but if I could have taken it home to practice, I might have enjoyed my introduction to musical theater. Instead, I sat impatiently in my plastic row chair, my spear locked in the props closet, while the teacher played his black piano, flourishing his hand to cue the sopranos, then the tenors. Around me, the girls and boys whom I usually knew as screechers, shouters, and gigglers now held forth with the sweetest sounds.

I decided to sing along. The teacher immediately waved us to a halt, like someone hitting the brakes after hearing a horrible new noise in the engine. After rising from his black bench, he pointed down the rows, one by one, asking each of us to sing a few notes. It sounded easy enough, like a smart class reciting the alphabet, but my mouth dried with fear. When my turn came, I gamely sang "ahhh," then warbled "ahhh" at a higher pitch, suddenly hoping that I had it. But the teacher winced and pulled his silver tuning fork from his white shirt pocket. He tapped it hard against his leather shoe heel and held up the vibrating metal stick like a candle emitting the purest hum of music. I certainly tried. I slid my "ahhh" up and down and up like a key feeling aimlessly for a lock. He clamped the tuning fork silent in his fist and told me not to sing.

For years, I didn't care. At stadiums, I stood silent through the national anthem, feeling half like a protester. In church, I mouthed the hymns. At Christmas, I dodged my mother's plea for us to join the neighborhood carolers by declaring myself an atheist, then marching into our rec room to watch the New York Knicks on TV. Although my mother bought an upright piano in hopes that her two sons might show a glimmer of interest in music, it soon became a bookshelf like every other flat surface in the house. Aside from rock and roll, which I tended to like raw, I happily ignored music for years, even fending off my mother-in-law, who insisted that she would teach me to appreciate classical music. "You're such a sensitive person, I know you'll enjoy it," she said many times. "It's your only flaw." When my marriage ended, my wife insisted that all of the rap CDs were mine.

Not until I began birding in my late thirties did I regret my tin ear. Although I would hear a bird sing many times, I could never keep the song in mind. It slipped away like a phrase in a foreign language. If only I had bothered to learn the basic components of music, such as tone and melody, rhythm and pitch, I might be able to catch and learn the patterns in the cheery squeals of bird songs. Without good ears, I didn't know if some

ILLUSTRATION BY JOHN SCHMITT

lilting run of music hidden up in the green leaves represented a commoner or a special treat worth hunting for with my binoculars. A friend of mine, who remembers bird songs as easily as the rest of us pick up advertising jingles, once halted our walk for 10 minutes beside a weedy roadside as his ears searched the edge of a nearby forest. Finally, he pointed out a tiny bird perched near the top of an aspen amid the leaves, flipping and flapping silvery green in the sunlight. With my binoculars, I saw my first Indigo Bunting, looking as brilliant as a dewdrop of cerulean sky. Who knew how many other little miracles I had missed with my dumb ears?

Upon moving into my cabin in the Catskills, I vowed to learn bird songs. In Manhattan, yearning for a better life in the country, I sometimes woke early in the morning to an ethereal whistling song from the street, a moment of purifying clarity before the jackhammers got to work. I took the songster to be a House Finch, the only bird I had seen on the fire escapes besides pigeons. But the song was so smooth and repetitive that I wondered if it wasn't synthesized, an unusual car alarm that I willfully transformed into an avian love song.

In the country, I expected to wake up to a happy morning chatter. Instead, I woke to my clock ticking in whispers. I had arrived in August, a quiet time of year, and I lived in a hemlock grove, a habitat that doesn't draw the noisy conclave of birds found in marshes or fields. And after seeing a black bear ambling up the hillside behind my cabin, I decided to forego the bird feeders that bears will topple and lick like candy.

Every day or two, however, a troop of chickadees landed in the trees around the cabin on what seemed to be their regular nomadic rounds. Their song I couldn't mistake: *chick-a-dee-dee-dee, chick-a-dee-dee-dee, chick-a-dee-dee-dee.* Like a boy who has just heard the bells of a Good Humor truck, I scrambled down the steps from my cozy loft, where the computer screen rules much of my day, and I stood behind my kitchen window, watching these chattering birds dart among the hemlock branches. Little critters with pudgy black-and-white heads, they almost seemed to perform for me like clowns, catching my eye from an open perch, then bursting away to hide, or rolling under the branch to peck among the needles. Scanning the troop with my binoculars, I often found a few fellow travelers, such as a Downy Woodpecker that seemed more mature and less flighty, methodically checking up and down the trunks of my yellow birch trees. After 10 minutes of this avian recess, the last bird flew off, and I climbed back up to the computer, refreshed by this country version of a coffee break.

As winter descended, I forgot about birds. By now, my initial sense of living in a cabin as a working vacation had given way to the chores of reality. I had to carry in logs for the stove, shovel snow off the steps before it froze to ice, bleed the pipes before leaving overnight. Being a slow learner, I came to accept the need for most chores the hard way, after hammering ice with a garden shovel, for example, or scooping gray water from the bathtub after the drain plug froze like a miniature skating rink for ants. At the computer, I labored on unfinished projects that had nagged me for months, rather than beginning anything new. By March, I wondered when life would give me a break.

It was a mixed-up season between winter and spring, when light snowfalls repainted the woods white for two or three days, then melted to flattened brown leaves. The nasty ice sheet under my tires finally disappeared, but the driveway still held puddles of mushy leaves, so I wore duck boots every day. My long johns had come to feel like a second skin I would never get to shed.

Then one afternoon, out of the gray quiet, I heard an isolated song: a beautiful high trilling with an obvious pattern that kept rolling and rolling like an avant-garde solo played by a jazz musician with bottomless lungs.

Then one afternoon, out of the gray quiet, I heard an isolated song: a beautiful high trilling with an obvious pattern that kept rolling and rolling like an avant-garde solo played by a jazz musician with bottomless lungs. It sounded like no bird I had ever heard. I scampered down my loft steps and grabbed my binoculars to scan the trees. Silence. Stillness. Nothing. And for days this bird teased me. Following no particular schedule, it would suddenly blast the March solitude like a musical string of firecrackers right outside my cabin, then vanish by the time I charged out my door. The one source of thrilling beauty in this gray season was probably hiding somewhere in front of my face.

A friend had a hunch. For once, I could describe a bird song well enough to help a knowledgeable birder with my clues. Checking my Peterson field guide, we found that the Winter Wren's song was "a rapid succession of high tinkling warbles and trills, prolonged, often ending on a *very high* light trill." And I had seen a wren from my loft window. Built on a natural bench in the hillside, my cabin looks back on a small cliff clawed from forest floor, with broken rocks, hanging roots, and tiny dirt caves under the duffy hairline of the hillside. Several times, a Winter Wren had darted into these little hideaways, emerged to perch for a moment on a front porch root, even hopped along the steep dirt like an avian mountain goat. But I hadn't been impressed. To me, it was a classic LBJ—a Little Brown Job—nothing to stir the heart. I admit to being what a friend has called a "cheap" birder, eager to be seduced by flashiness and color. I will grow weak over a lipstick red Scarlet Tanager. Yet this song was just as stunning.

In early April, I finally saw the wren again. Rather than the cliff pocket behind my cabin, he had settled across my brook in the dirt cavities and exposed roots of an embankment that had been torn open by a disastrous winter flood long before I arrived. The raging waters had gouged large chunks of rock and soil from the banks and rolled huge boulders downstream. My elderly neighbor, a seasoned fly fisherman, who had known every pool and rock in the brook, now surveyed a foreign stream, where all the stones had moved. He pointed out a large bite in the opposite bank, where the humus layer of the forest floor now sagged over a slope of loose dirt and stringy roots. This spot had once held an impressive boulder, he said, where his two grandsons had stood and caught their first fish. I sympathized over his lost monument. I remembered my own brook rock in Maine, where my first fish had been so eager that it jumped out of the water to be caught.

Yet the wren had found a home in this ravaged streamside. Under slumped mossy ground that still held an old yellow birch leaning over the brook, he had found a perch in the newly exposed basement of damp brown dirt, half-buried stones, and tangled roots. He hopped about the roots like a jungle gym, ducked into a tiny dark cave, then shot down to the stream rocks for quick pecks at a water puddle. I liked the way he decisively zipped from spot to spot, unlike the sparrows that sometimes stood around in front of my cabin kicking up leaves, like treasure hunters that never get anywhere in life. This bird had purpose. But he was also a runt. Unlike the other wrens, which flick their full tails as if catapulting peas, this version barely had a stub, as if its tail had been plucked. Perhaps that's why it liked the safety of being a miniature cave dweller.

I appreciated the Winter Wren as my new neighbor. In a way, I was leading a similar life. The end of my marriage in Manhattan had been its own flood, rolling away foundations, exposing nerve endings, leaving detritus on the low branches. My life seemed ugly and broken like the riverbank, yet I had to live it and start again. Rather than moping, the wren was singing. The other day, lured by a late afternoon solo of chirping and trilling, I stepped out of my cabin and discovered that the milky overcast had cleared to a flawless blue sky. After a moment, I discovered the wren down in my wood pile, exploring the gaps between the logs. Then he flew off 20 feet like a kid playing hide-and-seek, daring me to catch up. I whistled, tentatively at first, then louder, attempting a few trills. It didn't sound very good, but who cared? I was in the woods, finished with my computer for the day. I was exactly where I needed to be. ■

Will Nixon lives and writes in a small cabin in the Catskill mountains of New York.

The Sapsucker Woods Society

GREAT EGRETS BY CLIFF BEITTEL.

You can turn a simple plan for your future into an investment for the birds. A planned gift in the form of a bequest or life income agreement is an ideal way to plan for your future, to retain real benefits for yourself, and to enhance the Lab of Ornithology's efforts in bird research and conservation. Lab friends who take advantage of this special investment opportunity will become charter members of the exclusive Sapsucker Woods Society.

For more details, contact Scott Sutcliffe, associate director, Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Phone: (607) 254-2424; e-mail: sas10@cornell.edu.

Cornell Lab of Ornithology

Visit our web site at http://birds.cornell.edu

THE FIRST FAMILY OF FEEDERS HAS A WHOLE NEW GENERATION.

Sleeker designs, choice of green enamel or burgundy finish, and an exclusive peanut cage feeder in rustproof stainless steel. Fully assembled, easy to clean. 1-800-352-9164

DROLL YANKEES®

THE NEW GENERATION™

BINOCULARS AND SPOTTING SCOPES

Optic Outfitters for Birders

Ask about our new phase-corrected Ranger binoculars!

Authorized U.S. Dealer for:
Leica, Zeiss, Swarovski, Swift, Nikon, Celestron, Bausch & Lomb, Kowa, Questar, Tele Vue, Pentax, Canon, Meade, Steiner, Leupold, Bushnell, Burris, Fujinon, Eagle Optics, Bogen, Velbon, Brunton, Mirador

Get the best information, advice *and* value from Birders who know: Birds, Birders, Birding and Birding Equipment. We've built a nation-wide reputation on offering birders the best in selection, service and prices on quality optic products. Let our courteous and knowledgeable sales staff gladly assist you in selecting from our complete and extensive inventory.

Call and ask for your FREE Comprehensive Optic Buying Guide & Discount Price List on optics from all major manufacturers

Eagle Optics ☎ *(800) 289-1132*

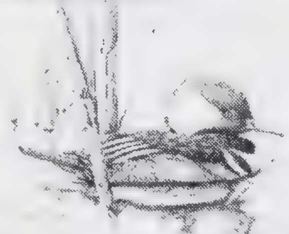
2120 W. Greenview Dr. #4 Middleton, WI 53562
Toll Free Order & Technical Assistance: (800) 289-1132
Fax: (608) 836-4416
Internet: www.eagleoptics.com
Email: earnest1@eagleoptics.com

THE AMERICAN BIRDING ASSOCIATION

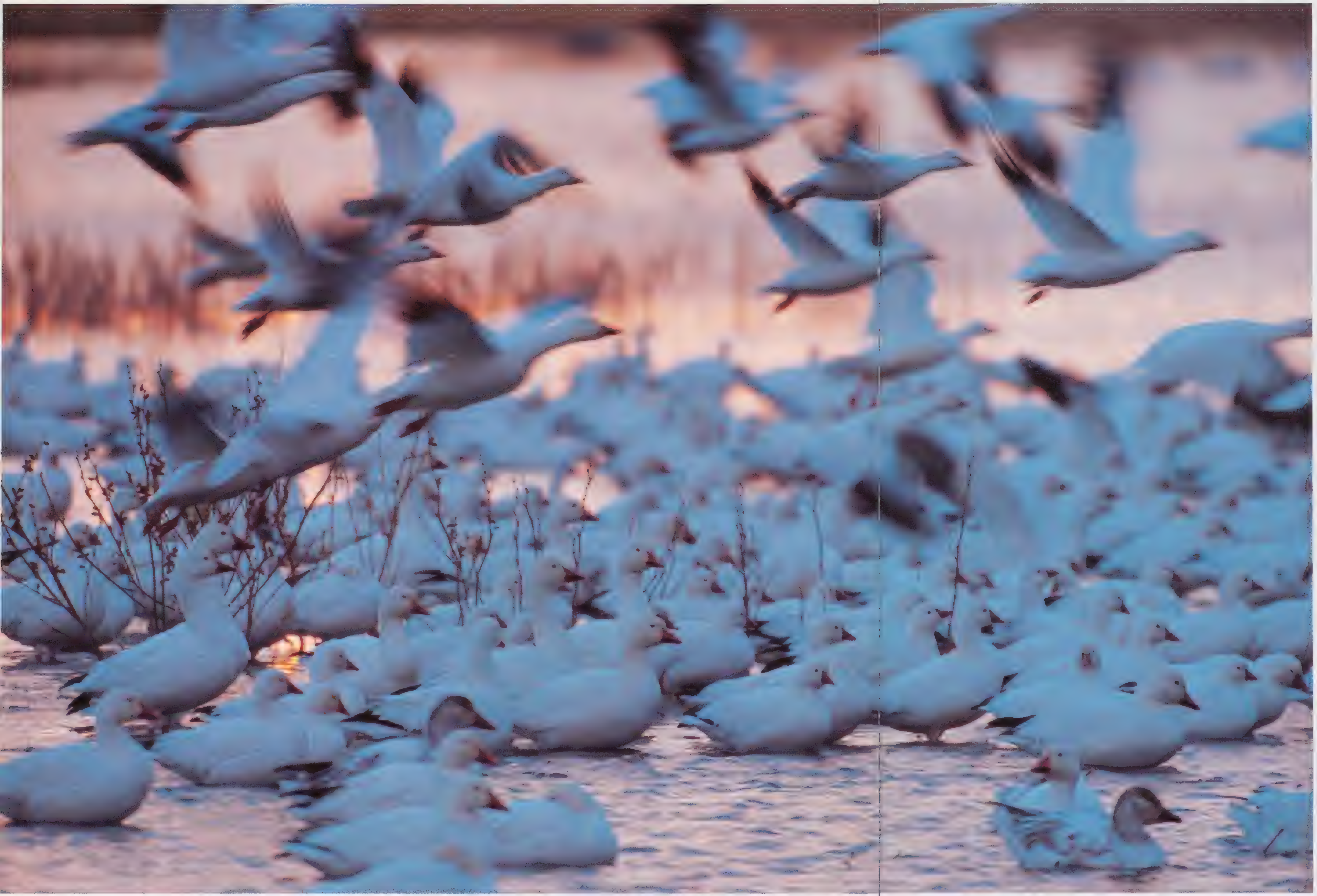
PO Box 6599
Colorado Springs, CO 80934
phone: 800/850-2473 or fax: 719/578-1480
E-mail: member@aba.org
Web Site: www.americanbirding.org

Join the American Birding Association — the only North American association for field birders. Get involved with bird education, conservation projects and

- Stay in touch with the latest issues in birding through **Birding** magazine and **Winging It** newsletter.
- Find all of the books, optics, and accessories you need in **The Birder's Catalog**.
- Make contact with local birders as you travel using our **Birder's Resource Guide**.
- Join us at birding **conferences** and **conventions**.



"The best value in birding today!"



Though perhaps better known for her stunning portraits of backyard songbirds, Marie Read recently began experimenting with more abstract compositions, examining the amazing patterns, shapes, and colors found in nature. Caught in the ephemeral glow of the predawn light at New Mexico's famed Bosque Del Apache National Wildlife Refuge, this mixed flock of Snow and Ross's geese has the pleasing, dreamlike look of an impressionistic painting.

Out of Ithaca

BY TIM GALLAGHER

Local nature photographer Marie Read has gained international fame with her evocative portraits of wild birds

Bird photography is a tough game. It takes an incredible level of drive, stamina, and, above all, patience just to take good pictures of birds—and then you have to compete with the thousands of other photographers striving to have their work published. I have a lot of respect for anyone who can make it in this field. Clearly, Marie Read has what it takes. Just pick up a few nature calendars and datebooks, or look at some recent issues of *Living Bird* or *Birder's World*, and you'll see her photographs prominently displayed. To date, she's had six covers (counting front and back) on *Living Bird*, a rare achievement at this magazine. And her new book, *Common Birds and Their Songs* (Houghton Mifflin, 1998), which she coauthored with sound recordist/photographer Lang Elliott, is exceeding all sales expectations across North America.

None of this surprises me. No one is more hard-working than Marie, and it's great to see her getting the recognition she deserves. I'm amazed how often I spot her when I'm driving

Marie always loves a challenge. She needed a picture of an Eastern Meadowlark to illustrate her new book, pictured below, but the young were about to fledge at the only nest she could find. Fortunately, one morning with perfect light—bright and overcast—was all she needed to create an attractive study of one of the parents bringing food to its young.

around the Ithaca area. There she sits, crouched behind a camera, tripod, and behemoth lens, trying to add another species to her lengthy list of bird photographs—or actually, more often, trying to capture a fascinating piece of behavior exhibited by a species of which she's already taken dozens of great pictures.

Marie's interest in birds dates back to her childhood in the south of England. One of her earliest memories is of a European Robin that nested in her great-aunt's garage. She has lived in the United States for nearly 22 years but still retains the telltale dialect of a Brit. Although she majored in developmental psychology at Cornell University, her primary interest has always been biology. Soon after graduating, she became a research assistant with renowned Cornell ornithologist and behavioral ecologist Steve Emlen and, in 1982, traveled to Kenya to assist him with his studies of White-fronted Bee-eaters.

Africa was where Marie developed—or perhaps discovered that she already had—an amazing capacity for sitting in an uncomfortable place (usually inside a blind) for lengthy periods of time. Her job was to watch bee-eaters all day long, for weeks at a stretch, and to record which females were laying eggs in which nests and which birds served as helpers at the nest. This rare ability to sit still for hours at a time has served her well as a bird photographer.

Marie was already taking pictures before she went to Kenya, but most of her work at first was black-and-white, semi-fine-art photography. Her time in Africa changed that. For five years, she spent six months of each year living in Kenya's Lake Nakuru National Park. The spectacular birds and other animals around her made wildlife photography irresistible. A pair of Secretary-birds nested less than 100 yards from her front porch. She borrowed a friend's aging Novoflex 400mm telephoto lens to photograph them, and once again had to spend hours sweating in a blind in the tropical heat. But her efforts paid off. She took some excellent pictures, including a great shot of a male Secretary-bird flying into the nest with a beakful of sticks as its mate looks on.

"It's still one of my favorite shots," says Marie, "and I took it without an autofocus lens or a motordrive." This photograph, which appeared in the East African nature magazine *Swara*, was her first publication. From that time on she was hopelessly hooked on bird photography.

Marie later traveled to Costa Rica, hoping to photograph colorful Long-tailed Manakins engaged in their elaborate courtship rituals. She hooked up with a researcher, who showed her a lek where these birds performed their

"This Black-capped Chickadee is my trademark kind of image," says Marie. "I enjoy familiar birds and hope, through my photography, to inspire other people to cherish them, too." She photographed the bird from a blind near her feeder on a snowy winter day. "I've found that the worse the weather is, the better the images I seem to get," she says.

Bobolinks have been Marie's favorite birds ever since she worked on an ecological study of the species in the early 1980s. "I never tire of watching and listening to the song-flight displays of Bobolinks," she says. Using an autofocus lens with image stabilization allowed her to dispense with a tripod, giving her the freedom and spontaneity she needed to capture this male as he circled above his breeding territory.

displays. "I sat in a blind for eight days and got nothing," she says. "A motmot came and some howler monkeys, but the manakins had changed leks." Still she persisted and finally got the pictures she was after at a lek near Monteverde. One of these shots ran in *National Geographic* magazine—certainly a milestone for any photographer.

Marie jokes that, for a long time, all of her traveling in exotic locales made her turn her nose up at the photographic opportunities local birds offered. "Going to all these places like Africa and Central America made me snooty," she says, laughing. Fortunately for people who like pictures of North American birds, that's all changed now. Local songbirds are one of her mainstays and always in demand by publishers. She started taking pictures of Bobolinks—one of her favorite birds—in the grassy fields around Ithaca in the 1980s. Then she photographed nesting Soras and Marsh Wrens at nearby Dryden Lake.

One of the hallmarks of Marie's photography from the start has been her ability to capture interesting bird behavior. Her powers of observation, carefully honed through her years as a trained research assistant in Africa, have paid off. She spent so much time in the field there, closely watching and recording the intricate details of bird behavior, it was a simple step for her to begin documenting it with a camera.

"I firmly believe that to be a good bird photographer you have to be a good observer of bird behavior," says Marie. "Capturing the decisive moment in an image is more than just luck. If you know enough about the birds, you begin to anticipate their actions."

As Marie's collection of spectacular and revealing bird images grew, she started putting together text and photo packages, which magazine editors found irresistible. *Birder's World* was the first American bird magazine to publish her pictures and articles, but the others have since followed suit.

Then, about three years ago, Marie decided to collaborate with Lang Elliott in producing a book about birds. Lang had already developed a concept for the book: his idea was to present in-depth accounts of 50 species of North American birds, many of which people could see in their own backyards. It would have vivid, colorful pictures of each species covered, as well as detailed descriptions of their life histo-

After landing in Albuquerque, New Mexico, one day last winter, Marie raced to Bosque del Apache National Wildlife Refuge to get there before dusk. But the closer she got, the gloomier it became—and then it started raining. "As I got to the refuge, the setting sun suddenly emerged below the dark clouds, creating a spectacular double rainbow," she says. "I hurried and made several images before the golden light faded. The rainbow was a wonderful gift." Above, a Greater Sandhill Crane drops in for a landing.

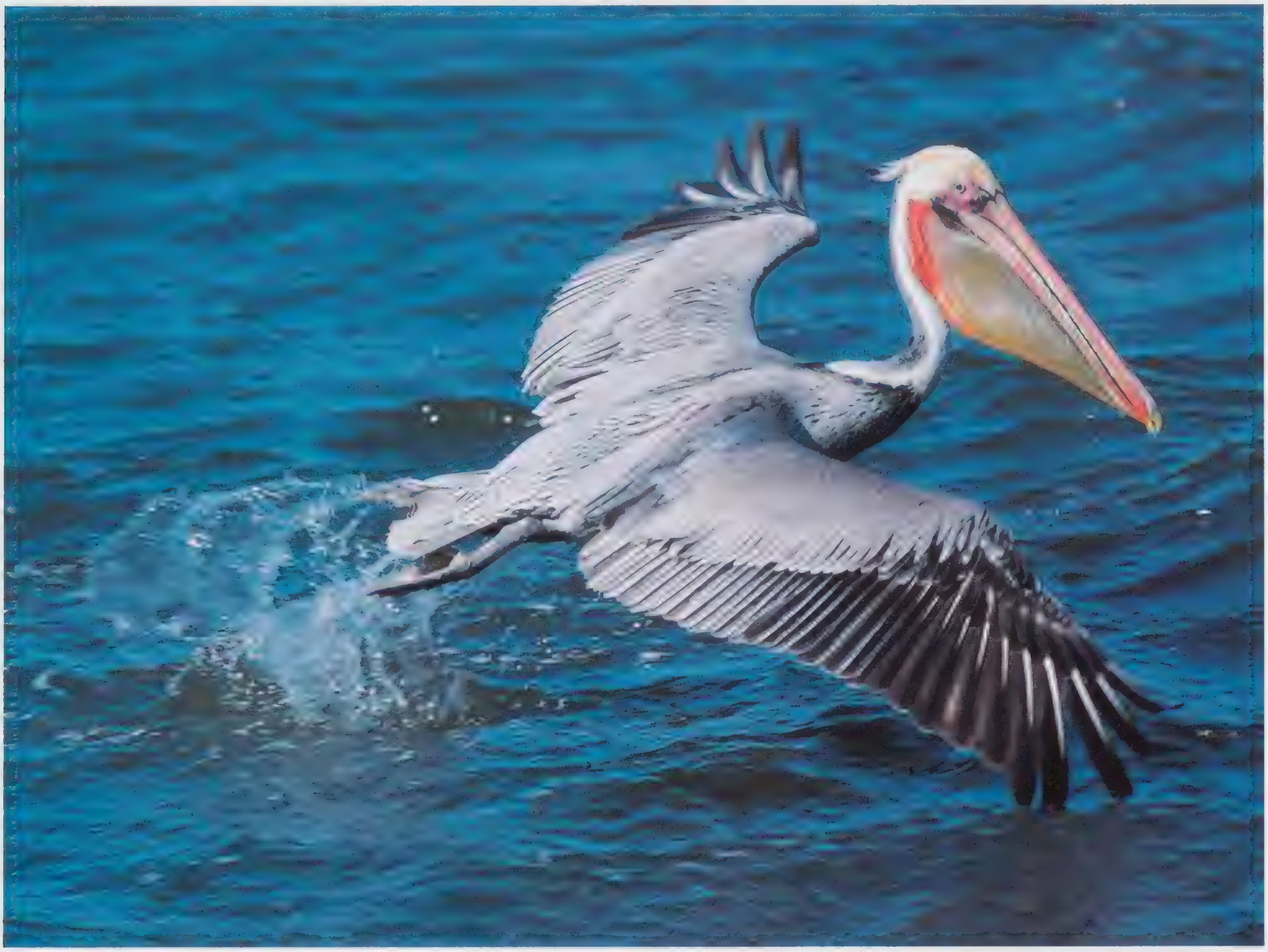
ries, behavior, and basic biology. And, to top it off, the book would contain a CD, featuring the birds' songs and calls. It was an ambitious project for one person to attempt. Although Lang had an extensive collection of bird recordings he'd made himself and a good selection of singing warbler photographs, he needed a partner like Marie, who could bring her impressive collection of bird photographs, her outstanding abilities as a writer, and her boundless enthusiasm to the project. The result of their collaboration was the aforementioned *Common Birds and Their Songs.*

Marie and Lang were a winning team from the start. Marie wrote much of the introduction and all of the species accounts and supplied numerous photographs, some of which she had to shoot specifically for the book. "We didn't have a shot of an Eastern Meadowlark, so I had to search for one that was willing to be photographed," says Marie. "I spent weeks trying to find a nest—not an easy task. They're well hidden on the ground in hayfields." She finally located a nest, just as the young were ready to fledge, and she only had one day to photograph them. It was enough time. One of the pictures of an adult meadowlark she took that day was included in the book, as well as in this photoessay. For Lang's part, he wrote the additional text, worked on the design of the book, created the CD that accompanied the book, and oversaw the daunting task of production.

Recently, Marie has begun experimenting with other ways of expressing the beauty of birds in her images. "From the beginning, I've wanted to portray birds in an unusual way," says Marie. "I'm well known for my images of backyard songbirds, taken in soft light and beautiful surroundings, and for capturing seldom-seen behaviors. But now I want to explore much more artistic themes—to free myself from the confines of a blind and make spontaneous, abstract bird images that go beyond simply illustrating the subject."

Marie hopes to collaborate on another project with Lang Elliott soon, this time a book about bird behavior. Considering the vast number of excellent photographs she has depicting birds courting, feeding, and interacting in various ways, she's off to a flying start. ■

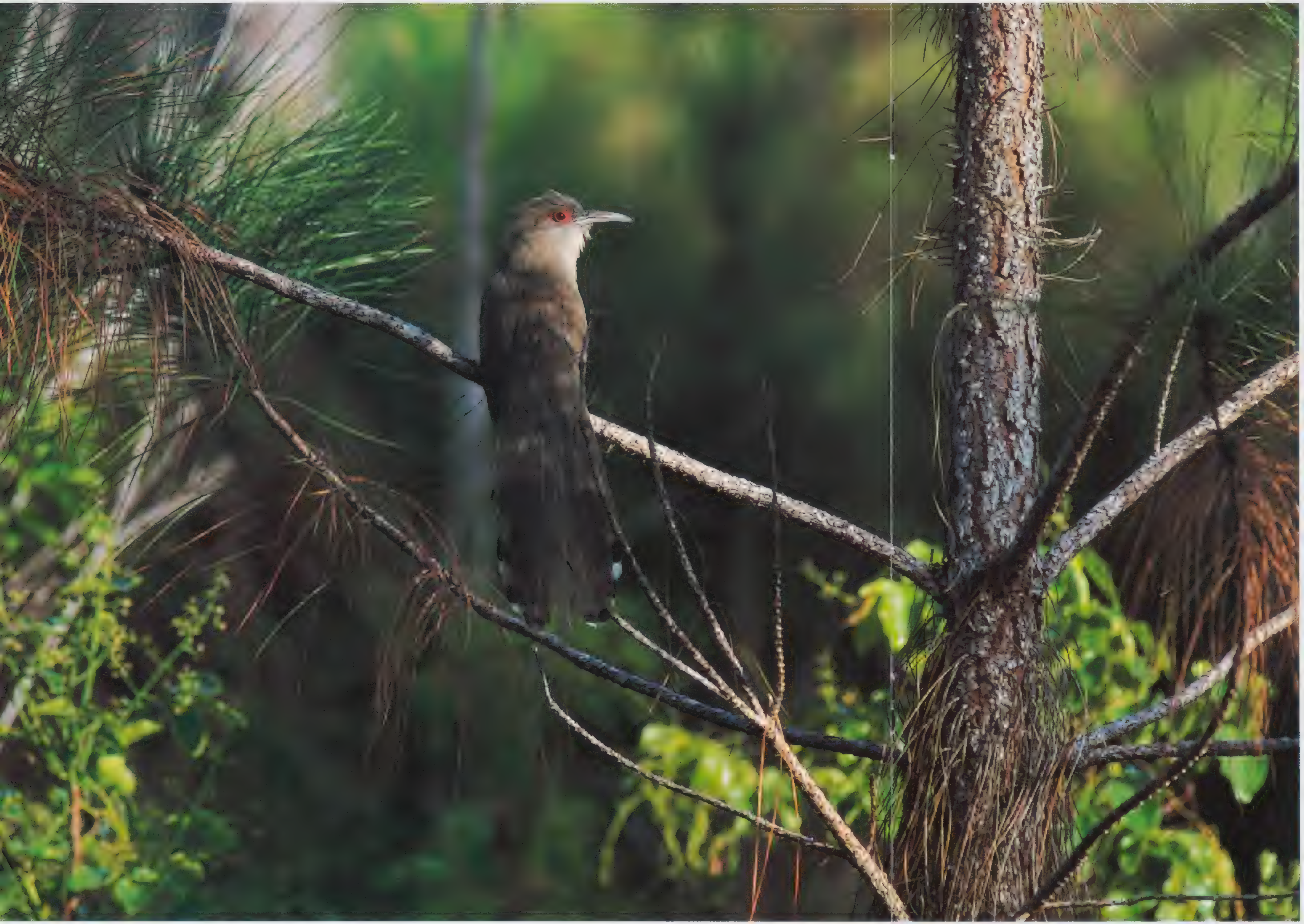
If you watch birds long enough, you will discover the clues they give when they're about to take flight, and you'll be ready to take dramatic action shots like the Brown Pelican image below. "Pelicans are pretty obvious," says Marie. "They raise their wings and hold them partially open before pushing themselves out of the water. Other birds give more subtle clues."



Marie was knee-deep in a rising tide when she photographed these Black Skimmers taking off (above). "As the tide came in, the sandbar where the skimmers were resting started shrinking, pushing the birds closer and closer to me," she says. An intentionally slow shutterspeed rendered them softly blurred. "For so long, I've tried always to take perfect, tack-sharp bird portraits—it's refreshing to free myself and make impressionistic images like this."

This white phase Reddish Egret looks like it's dancing on the surface of the water as it rushes wildly about, trying to catch tiny fish in the shallow waters of a Florida lagoon. "The challenge in a situation like this is to be able to pan quickly with the bird as it moves erratically about, turning this way and that," she says. "Autofocus lenses certainly help, but this was actually taken several years ago with a manual focus lens."

BIRDING IN PARADISE



BRUCE HALLETT

BY RACHEL J. DICKINSON

Exploring the birdlife and beaches of the Bahama Islands

As the little plane set down on a tiny runway, about as smooth as my gravel driveway at home, I noticed the carcasses of other small aircraft lining the tarmac—each one with love vines winding in and out of the struts and the missing windows.

"Welcome to Andros," said Jeff Birch as he rushed up to meet us, wearing sandals, khakis, and a bright blue batiked shirt. Jeff owns Small Hope Bay Lodge and was there to pick us up in the resort "bus."

The group I was with was made up entirely of travel writers and editors from a variety of North American publications. We had come to get a taste of Andros Island, a place that still feels very much off the beaten path to most people, unless you're a scuba diver or a saltwater flyfisher after bonefish. The Bahamian government is just starting to figure out how they can jump on the ecotourism bandwagon, and they had brought us here to sample the country's natural splendor.

A little over a quarter of a million people live on the more than 700 islands and cays (pronounced "keys") that make up the Bahamas. Unlike many islands, these were not formed by the great upwelling of magna that occurs when an oceanic crust plunges beneath a continental crust. Rather, they are high points of three massive islands of oolitic limestone that existed before the last Ice Age. As the great ice sheets melted, the level of the surrounding sea rose. So we were actually standing on the tips of submerged mountains.

We walked out of the brand-new, air-conditioned Andros Town Airport into the blazing heat of the Caribbean sun. The scrubby Andros pine trees surrounding the airport offered little relief. Above us, curious Turkey Vultures circled, lower and lower and lower. Hmmm. Our first Androsian birds.

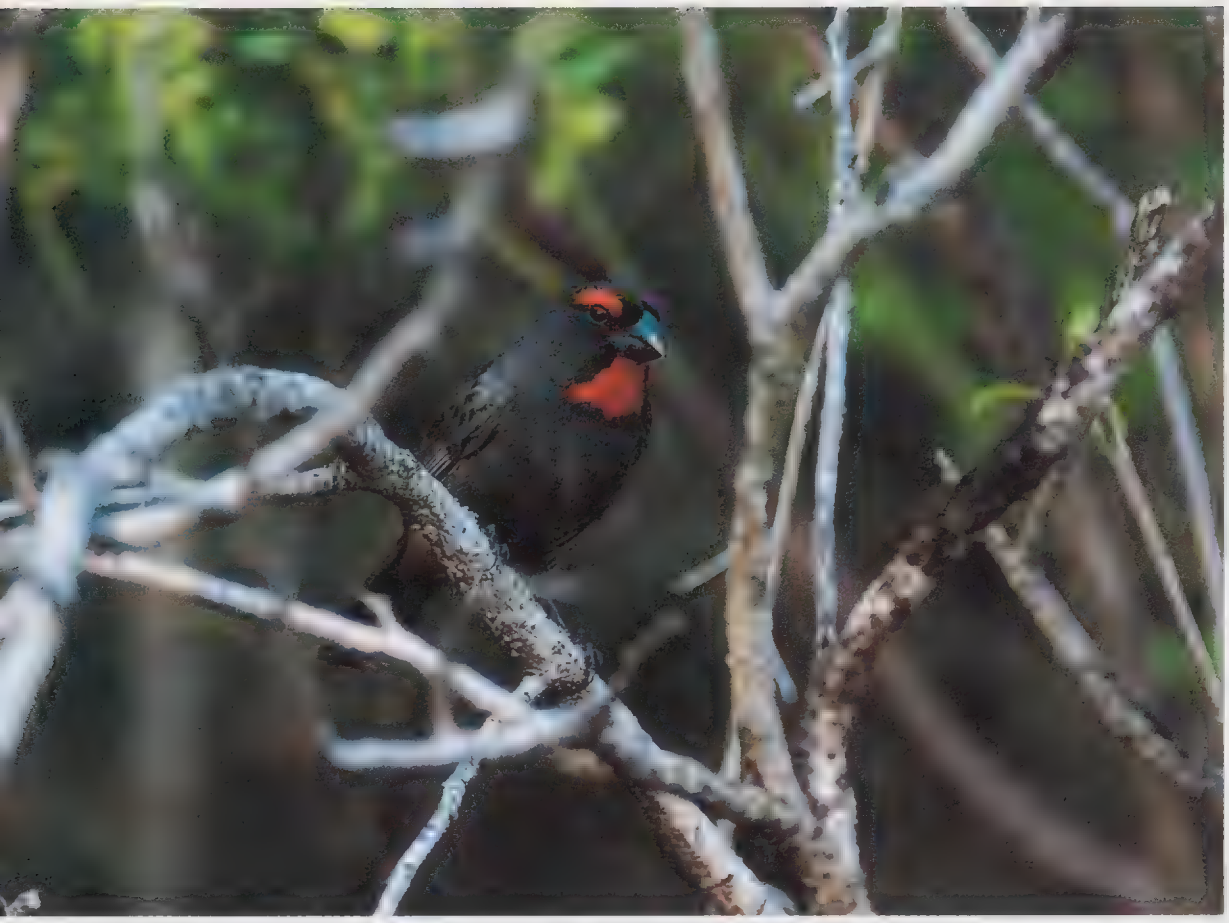
We had just come from two days of touring the western end of Grand Bahama, the northernmost island in the Bahamas. Most of the people who live on Grand Bahama (about 50,000 in all) are clustered around the city of Freeport. With its casinos and nightclubs and its salmon and light green stucco buildings on wide palm tree-lined boulevards, Freeport looks a little like Miami in the 1950s. While we were there, a forest

The Bahamas are a wonderland for birders, offering a variety of interesting bird species you won't find in the United States. Most of the breeding birds are part of the West Indian avifauna. The Great Lizard-Cuckoo (at left) is a common, though secretive, resident of woodlands and thickets on Andros Island.

BHL

Blank Page Digitally Inserted

BRUCE HALLETT



At right, three birders stroll down a quiet trail on Andros, searching for Bahamian specialties such as the Greater Antillean Bullfinch (above), a common resident through most of the Bahamas. Look for them in thick coppice. Far right on facing page, a Cuban Emerald. These pretty hummingbirds are permanent residents on Grand Bahama and Andros and can be seen in gardens and pine woods.

fire burned just outside the city, scorching all of the underbrush in a large tract of pine forest, making the air in the city hazy with blue smoke and leaving a faint acrid smell on everything it touched.

Erika Moultrie of Kayak Nature Tours had taken us birding on both days. A German-born former tennis pro who has lived on Grand Bahama for a couple of decades, Moultrie combines her passion for birding with other outdoor activities. Even inexperienced birders come away from one of her kayaking, biking, or hiking excursions feeling like they've learned something about Bahamian birds.

Our first outing had been to the deserted Shannon Golf Course, with its cement pond and overgrown fairways, where we all had a chance to see a hardcore birder in action. Bill Thompson III, editor of *Bird Watchers' Digest,* led the charge through the brush and the fields. With binoculars slung bandolero-style over his shoulder and a bush hat firmly planted on his head, Thompson stormed the empty golf course. Occasionally he would stop, listen intently for a moment, swing his binos into place, and then point—like a bird dog—as he shouted the bird's name. This was his first time in the Bahamas, and every new bird he saw—Bahama Swallow, Bahama Yellowthroat, Cuban Emerald, Stripe-headed Tanager, Bahama Mockingbird, Greater Antillean Bullfinch—sent his blood pressure through the roof.

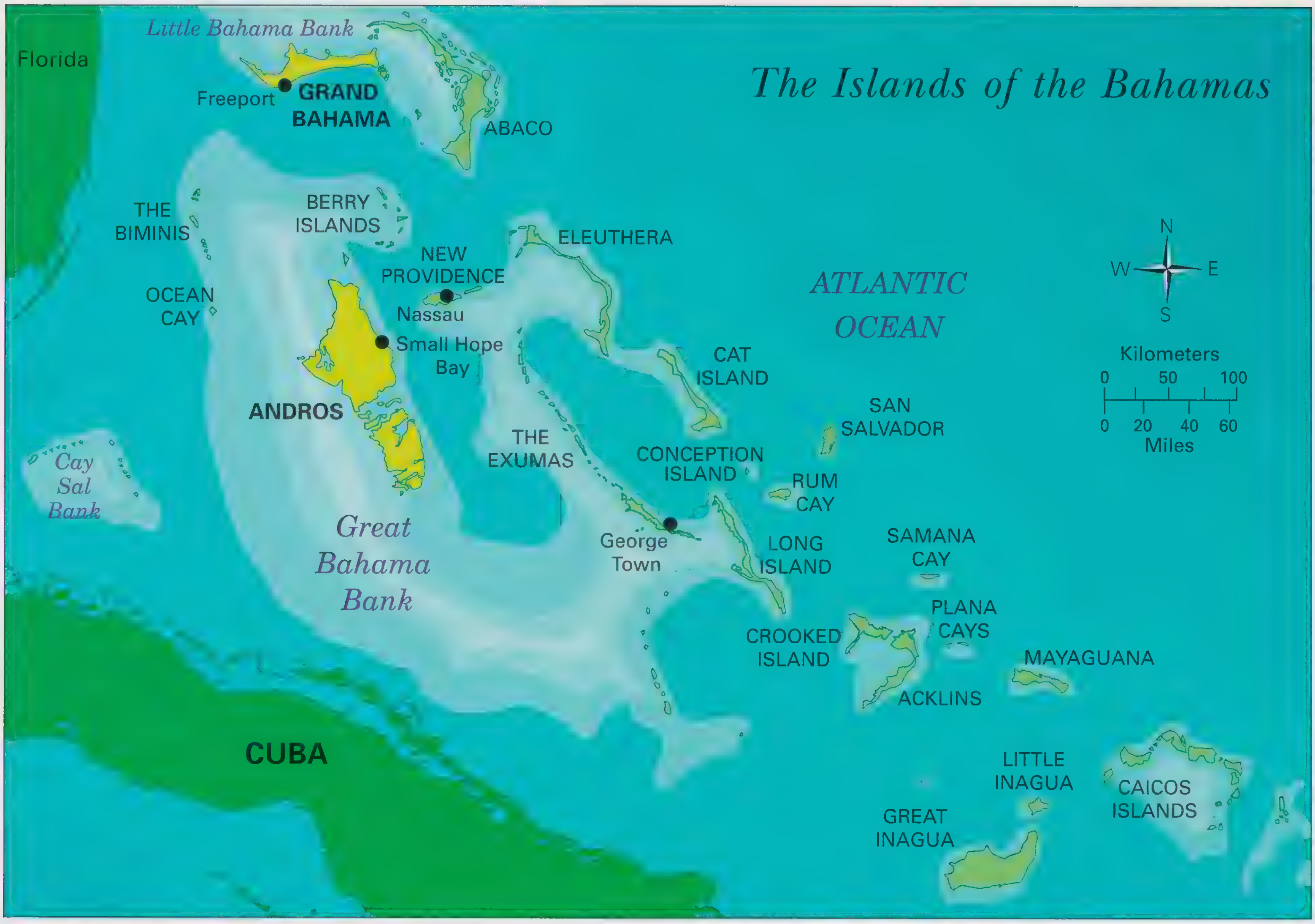
We all scurried after Thompson, like ducklings following their mother, just waiting for him to point the way and enlighten us. When Thompson got excited, we got excited, because we knew he'd found something great.

Moultrie took us birding in the Lucayan National Park, which sports a variety of habitats—pine woods, coppice, mangrove swamp, and beach. We climbed into two-man kayaks at the mouth of Gold Creek and paddled silently through the mangroves. Six Magnificent Frigatebirds cruised past overhead, like a squadron of B-12 bombers. The bizarre calls of Least Bitterns sounded around us, but we couldn't spot them in the surrounding cover. Numerous colorful migrant warblers from the United States and Canada (Palm, Prairie, Cape May, Black-and-white, Black-throated Blue, Yellow-throated, and more) flitted through the mangroves as tiny crabs leapt off the low-hanging branches, falling plop, plop, plop into the water ahead of our kayaks.

We lunched on the beach in the shade of some tall pines, while shorebirds ran in and out, foraging frantically between waves. Laughing Gulls hung in the air overhead, trying to see what we had for lunch. Surely this is what paradise is like, I thought as I sipped my coffee and gazed at the blue, blue sky and the pristine white beach.

RACHEL J. DICKINSON

MAP BY MICHAEL DIGIORGIO



The Bahamas are a study in contrast. Thoughts of the beautiful birds and the gorgeous places we'd seen had played in my head as we headed for the small inter-island airport. Our plane was scheduled to leave at 1:30 P.M. Of course, we arrived early to make sure we wouldn't miss it. When we got to the concrete-block terminal, the temperature outside in the blistering sun topped 90 degrees. All 12 of the seats in this tiny, air-conditioned oasis were taken—mostly by locals, who were gazing, spellbound, at "One Life to Live," an American soap opera that blared from a small television mounted on a bracket in the corner. In a picture frame hung carefully on the wall behind the ticket counter was a smiling portrait of O. J. Simpson, bonefish in hand, signed "Best regards, the Juice."

We went back outside, set our bags on the dusty tarmac, and waited. And waited. 2:30: still no birds, except for Turkey Vultures—more and more of them circling above us each time we looked. 3:30: we watched a line of ants disappear in a sandy crack in the pavement. 4:00: we each repeated our life story for the fifth time. Finally, at 4:30, a man took our tickets and helped us load the bags into the airplane's hold. Then he climbed into the pilot's seat and got ready to fly the 1:30 plane to Andros. Welcome to Bahama time.

The bus from Small Hope Bay Lodge that met us on Andros turned out to be an early-model Dodge Caravan. We had to pass our bags through the seats to the back because the back door didn't open. You could pop the side windows open at least an inch, but you had to keep them propped up with your elbow or they would fall back into place. What used to be the headliner hung in tattered shreds from the ceiling.

As we drove the 10 miles to the resort, Jeff slowed down and talked to everyone we passed. "Hey mon," he'd lean out his window to gab. "How ya doin'?"

Jeff, a white man on an island inhabited almost exclusively by black Bahamians, grew up on Andros. His father started Small Hope Bay Lodge in 1960 as a dive-school-cum-getaway. A mile offshore lies the Andros Barrier Reef, the third-largest barrier reef in the world. Today, Small

BRUCE HALLETT

RACHEL J. DICKINSON (2)

Hope Bay Lodge is one of the largest employers on the island, surpassed only by Androsia—the batik factory started by Jeff in the early 1970s—and by the nearly deserted air force base plunked down on the island during World War II.

On the way to the resort, we passed several half-built or half-destroyed buildings—it was hard to tell which direction these mostly concrete-block buildings were going. Jeff explained that it can easily take five years to build a house on the island because no one wants to secure mortgages through banks. Rather, they just lay a few layers of block whenever they have enough money.

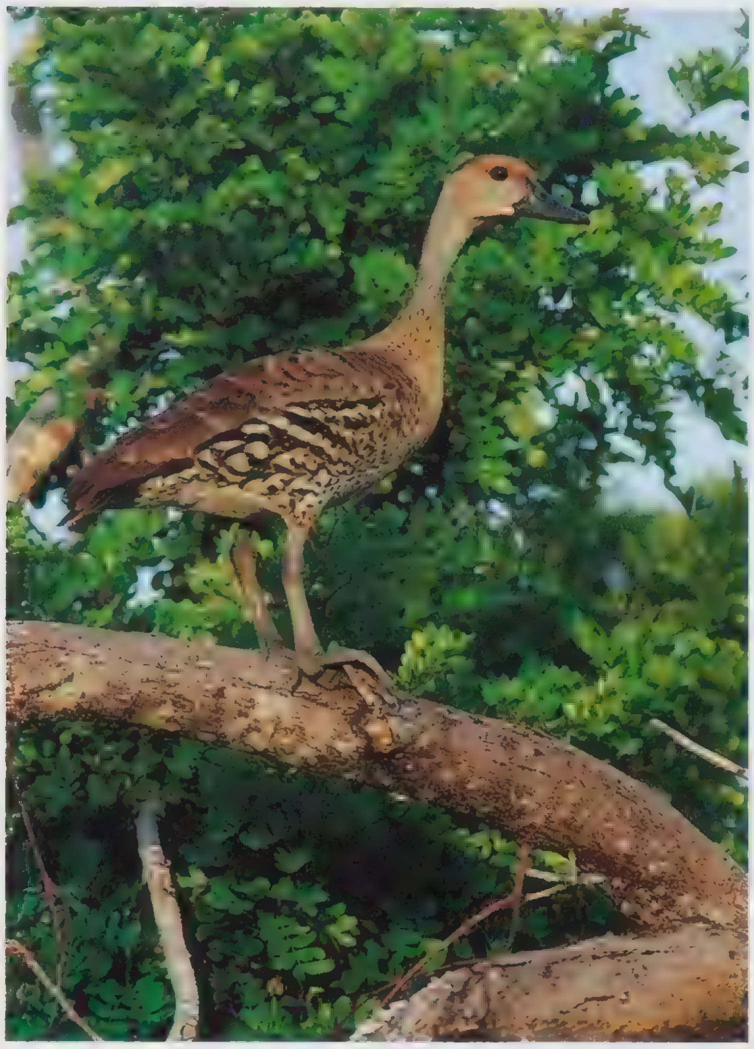
We finally turned down a long gravel drive with mangrove swamp on both sides—a swamp we would later learn was a haven for the secretive Clapper Rail. Then I saw it—the open-air thatched hut with bottles of rum and pieces of fresh coconut sitting on the counter. Behind the hut glistened the blue, blue water of the Atlantic Ocean. I realized, at that moment, that we had arrived on Gilligan's Island.

With 2,300 square miles of land, Andros is the largest of the Bahama Islands. But Andros is cut through in at least three places by saltwater inlets (called creeks), making it impossible to travel from the northern to the southern tip of the island without using a boat. Most of the 8,000 inhabitants live in the north or scattered along the eastern shore. The northern part of the island is pine forest; the central section around Small Hope Bay is made up mostly of dry scrub and mangroves.

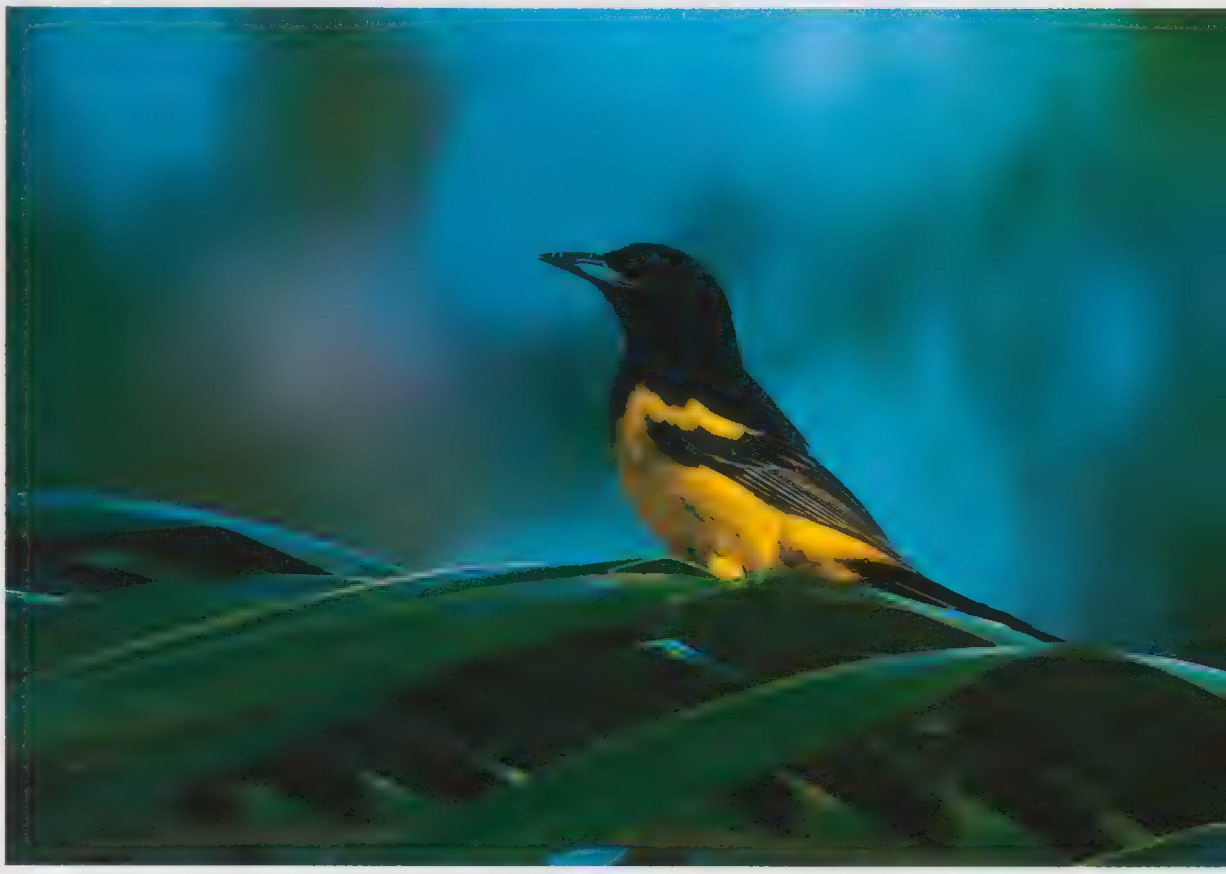
Andros is famous for its blue holes—collapsed limestone sinkholes up to 600 feet deep with a layer of freshwater floating on top of saltwater. Andros is also renowned for its "chickcharnies," the Bahamian version of leprechauns. Legends of these mythical creatures, which are said to have feathers, bright red eyes, and three toes on each foot, may have been inspired originally by sightings of a now-extinct giant flightless barn owl (*Tyto pollens*) that almost certainly inhabited the island in 800 A.D., when the Lucayan Indians arrived on the scene.

Small Hope Bay—reportedly named by Henry Morgan (a.k.a. Morgan the Pirate), who swore that there was "small hope" that anyone would find his treasure buried in this bay—is a pristine stretch of white sand and coconut palms on the eastern shore of Andros. Jeff's father, a scuba enthusiast, took one look at that reef lying just offshore and decided to establish a scuba resort. Jeff employs four dive masters—Big Jim, Moose, Skebo, and Michael—who can teach anyone to dive in two hours and will also, in the course of a day's work, take experienced divers over the wall, a 185-foot dive. The lodge has 20 cottages stretched along the beach. Built from Andros pine and coral rock, all of the cottages face the ocean, which is a good 20 feet away, and between your cottage door and the water stand coconut palms with hammocks strung between them. The cottages have electricity but no phones, no televisions, and no clocks. And there are no room keys. In fact, none of the doors has locks. Calling the lodge informal is an understatement. The most important item in your cottage is the big pile of green beach towels sitting on the wicker table.

Bahamians seem to have a curious relationship with the wildlife around them. It's viewed either as food or a nuisance or as nothing at all. "Instilling in people an appreciation for natural habitats and wildlife is a major challenge in our resource conservation and protection efforts," says Kathy Oliver, assistant director of the Rand Nature Centre, one of the parks run by the Bahamas National Trust. Located on Grand Bahama Island, the Rand Nature Centre's main thrust is public education—taking people hiking on trails through the pine forest; pointing out plants used in traditional medicinal remedies; and, most important, teaching them about the birds and other wildlife.



BRUCE HALLETT (2)



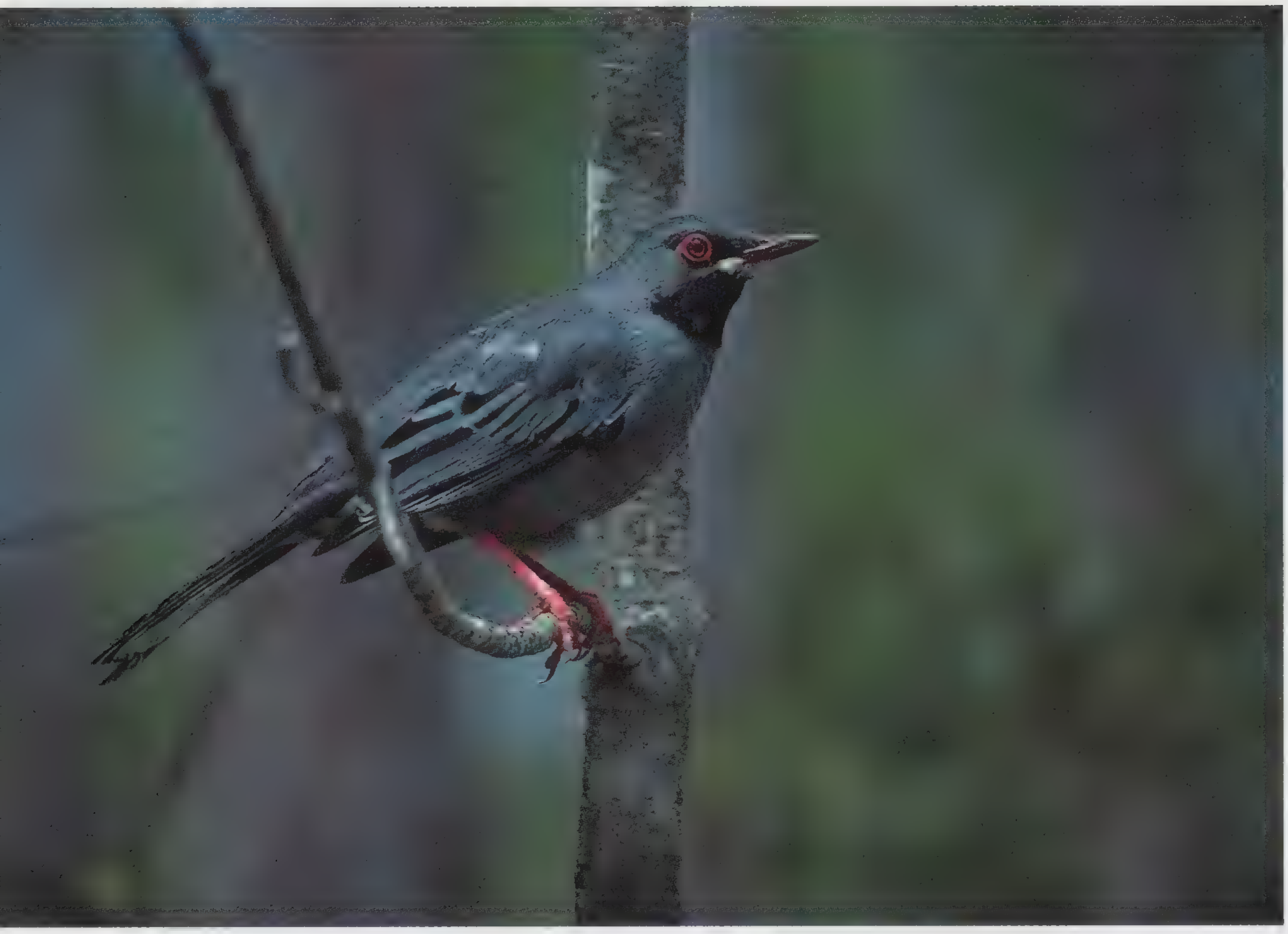
This is an exciting time to visit the Bahamas if you're interested in birds. According to Oliver, *A Birder's Guide to the Bahama Islands*, by Anthony W. White, published last year by the American Birding Association (ABA), has brought a marked increase in birding traffic to the islands. The Bahamas have a useful web site <www.bahamasnet.com/w.ecotours.html> that contains a list of ecotours, about half of which include birding as an activity. Clearly, the local people are beginning to realize that birding can mean big bucks for the Bahamian economy.

More than 300 species of birds have been recorded in the Bahamas. Some, like the Greater Flamingo and the Bahama race of the Cuban Parrot, can only be found in the wild on one or two of the islands. One hundred and nine species breed in the Bahamas, 169 species are migrants or winter there, and 45 species are vagrants. Most of the breeding birds are part of the West Indian rather than North American avifauna, a fact that harkens back to before the last Ice Age, when one of the three islands was a mere five miles from what is now Cuba.

Bruce Hallett met us at Small Hope Bay Lodge. Hallett has birded extensively in the

Like Gilligan's Island of sixties television fame, Andros Island's Small Hope Bay (facing page) has thatched huts, coconuts, and incredible solitude. You almost expect the Professor and Mary Ann to drop by any second, looking for the Skipper. Although the Black-cowled Oriole (above) is still common on Andros, the species has nearly been extirpated on nearby Abaco because of brood parasitism by Shiny Cowbirds. The West Indian Whistling-Duck (at left) is an endangered species and difficult to find in the Bahamas. They sometimes roost in the tarpon ponds on Andros.

BRUCE HALLETT



The Red-legged Thrush (above) is a common bird of gardens, wooded plantations, and forests in the northern Bahamas. Below, another strange bird: photographer Bruce Hallett, who took all of the bird pictures in this article.

Bahama Islands and took most of the photographs included in the ABA guide, so we were thrilled to have him as our local guide. Andros is a paradise for Neotropical migrants—such as warblers—and is home to unusual species like the Great Lizard-Cuckoo, the Black-cowled Oriole, and the West Indian Whistling-Duck.

Going birding with Hallett and Thompson was a rare treat. Both men possess humor and wit so dry, you feel parched just listening to them. I'm still a novice when it comes to birding—especially when I'm outside my bailiwick in the Northeast. Trained as a geologist in college, I spent years looking at the ground whenever I took a walk outside, so bringing binoculars up to my eyes and focusing on something above my head still seems foreign. But when Thompson and Hallett got into an all-out pishing contest walking through a patch of scrubby pine forest between some tarpon ponds and the Atlantic Ocean, the woods came alive.

RACHEL J. DICKINSON

Pish, pish, pish. Black-cowled Oriole. Got it! Little Blue Heron, Yellow-crowned Night-Heron—got it! White-crowned Pigeon, Common Ground-Dove, Willet, Ruddy Turnstone, Mangrove Cuckoo, Smooth-billed Ani, Cuban Emerald, Red-legged Thrush, La Sagra's Flycatcher, Bahama Swallow—got it, got it, got it! We saw Bahama specialties. We saw Bahama endemics. We saw migrants. I was disappointed not to see a West Indian Whistling-Duck, but Hallett cheered me up by posing for photographs in a junked mail truck with the blue, blue ocean lapping at the shore right behind him. And Thompson posed behind a gigantic termite mound.

When we returned to Small Hope Bay Lodge, Big Jim took us snorkeling around a patch of elkhorn coral. Three years ago, Big Jim was a London bobby cracking the heads of hooligans at football matches, but he took a vacation on Andros Island and never left. We eased slowly over the side of the boat into the 75-degree water. Thompson, an inveterate lister, sported a waterproof fish identification chart on his wrist.

An extraordinary world of colors and shapes opened up when I put my face into the warm sea. Looking at Bahamian fish through a diving mask became, for me, like looking at Bahamian birds through binoculars—beautiful unfamiliar forms and shapes drifted in and out of my field of view.

Thompson would point to a fish and then to a picture of the fish on his card. "*Glub, glub,* parrot fish. Squirrel fish, *glub, glub, cough,* barracuda. Nurse shark." "Got it, *glub, glub, gasp,* got it, got it!"

Big Jim took us up Fresh Creek to look for dolphins, and when we motored back to the elkhorn coral about an hour later, we saw a man sitting on a tiny island of barren rock, no more than 50 square feet. His boat was pulled up onto the rocky beach, and when we moved slowly past, he smiled and held up the three-foot barracuda we had earlier seen swimming in the elkhorn coral.

"Boy, I hate to see that," said Big Jim, "but people have to eat."

And as we headed back to our island paradise of steam tables and rum drinks and Cuban cigars, this seemed a perfect example of the paradox of ecotourism—those who can afford it travel to exotic countries to view the birds, fish, and other wildlife, while the native population sees these natural treasures as food or nothing at all. ■

Rachel J. Dickinson is a newspaper columnist, essayist, and freelance writer based in Freeville, New York. She frequently writes for this magazine.

Special Offer!

The Birds of North America

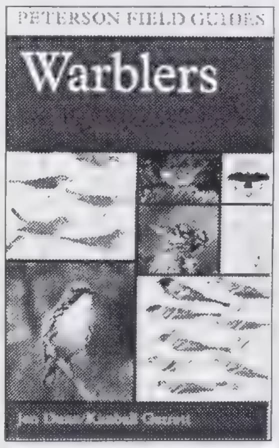
A limited number of charter subscriptions to *The Birds of North America* are still available to members of the Cornell Lab of Ornithology (see *Living Bird*, Spring 1998). While the offer lasts, Lab members can purchase the entire 18-volume set (all 720 species accounts) for the historically low price of $1,690, a savings of $560 off the current subscription price.

Don't miss this special opportunity. For more information, contact Pat Warner, The Birds of North America, 1900 Benjamin Franklin Parkway, Philadelphia, PA 19103; (215) 567-1170; e-mail: warner@birdsofna.org; web site: http://www.birdsofna.org.

The Birds of North America, No. 10, 1992
Snowy Owl
The Birds of North America
Order STRIGIFORMES Family STRIGIDAE

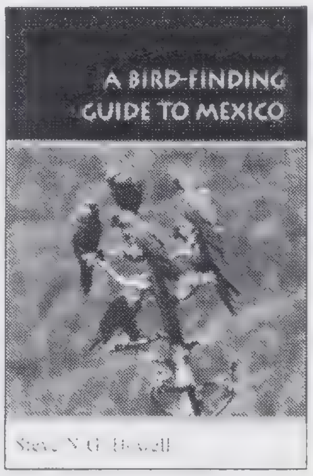
Are You Ready for Spring Migration?

A Field Guide to the Warblers of North America
Jon Dunn and Kimball Garrett



This field guide to the North American Warblers is part of the well-known Peterson Field Guide series. It has 32 color plates, 141 photographs, and 60 maps. All 60 North American species are described in detail, from field marks and vocalizations to mating habits and preferred habitats.
Item #952
ABA Sales Price $17.95

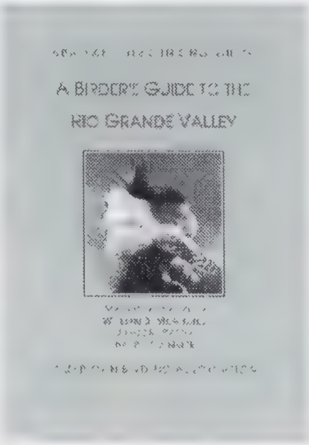
A BIRDFINDING GUIDE TO MEXICO
STEVE N.G. HOWELL
With a rich variety of stunning avifauna, Mexico provides the first taste of Neotropics for most birders. Here is a guide to Mexico's best birdfinding sites, from Baja California to the Yucatan Peninsula. Steve N.G. Howell, co-author of the widely acclaimed *Guide to the Birds of Mexico and Northern Central America*, has selected over 100 sites where birders may see more than 950 species, including virtually all of the endemics and regional specialties.



ITEM #MX1002, ABA SALES PRICE, $28.00

A BIRDER'S GUIDE TO THE RIO GRANDE VALLEY
Mark Lockwood, James Paton, Barry R. Zimmer, and William B. McKinney

The text for this third edition of *A Birder's Guide to the Rio Grande Valley* has been thoroughly revised by local experts. Annotated checklist includes information on relative abundance, normal range, and proper habitat. The text covers an expanded area from the Gulf of Mexico to Las Cruces, NM.
Item #414, ABA Sales Price $23.95



Call for a free Birder's Catalog today!

ABA Sales

Specializing in books, optics, and accessories for birders.

PO Box 6599, Colorado Springs, CO 80934
Phone: 800/533-2473
Website: www.americanbirding.org/adcornell.htm

DESPERATELY SEEKING BINOS

BY KEN ROSENBERG

In search of the best and the brightest binoculars for birding

If you're in the market for new binoculars these days, chances are you're confused by the bewildering array of makes and models available in nearly every price range. Indeed, when we set out to conduct this binocular review—our first in more than three years—we were unprepared for the onslaught of optics that arrived at the Lab of Ornithology. We ended up with 61 pairs, and some manufacturers didn't even respond to our request for test products. This proliferation of new models reflects the stiff competition in the top-of-the-line markets as well as the budget categories, brought about by several savvy companies entering this formerly stagnant field and by the tremendous boom in recreational birding during the past decade.

To help sort through this morass of glass, I gathered together 10 certified Lab of Ornithology bird-heads, ranging in ability from novice and casual birders to three members of the Sapsuckers, the Lab's do-or-die World Series of Birding team. Reviewing optics is largely a subjective exercise, and our panel included some of the most opinionated birders I know. I myself bring certain biases to this review, which I will shamelessly share. I've been birding for roughly 40 years, and for more than half this time I've worn eyeglasses. As a professional ornithologist and fanatical birder, I've always demanded the highest-quality optics. For many years, I suffered the tunnel-vision image inflicted by binoculars that were poorly designed for the seeing-impaired. It's also no secret that a certain Austrian optical instruments manufacturer captured my attention during our 1995 review. The company, Swarovski Optik, has since become sponsor of the Sapsuckers, bestowing upon us the best binoculars and scopes it produces. I must admit that I entered this review wondering if anything out there could beat my Swarovski 10x50 SLCs.

HOW TO CHOOSE BINOCULARS: WHAT'S YOUR BOTTOM LINE?

When you're shopping for binoculars, it's important to consider the kinds of birding you enjoy most as well as the cash resources you're willing to expend. For most people, price is an important limiting factor and, as with most high-tech toys, price largely sets the limits on quality and other features. For example, less-expensive binoculars are rarely very durable or waterproof, and some of them produce such a poor image they'll cause severe eyestrain if you look through them too long. With virtually all of the models we tested, price was an excellent predictor of overall quality, as assessed by our reviewers. But one of the refreshing surprises for us was the array of decent binoculars in the midpriced and budget categories, which shows that manufacturers are finally rising to the challenge of producing good birding optics at an affordable price.

In general, however, I recommend spending as much as you can afford on binoculars. Consider the following points: (1) It's a myth that beginning birders (or older children) should start with inexpensive binoculars. Using high-quality optics right away will enhance your enjoyment and speed up your ability to learn more about birds. This could make the difference between someone

Master optical reviewer Ken Rosenberg poses with a few of the many worthy binoculars sent to us by eager manufacturers.

TIM GALLAGHER

becoming a lifelong birder or a confirmed nonbirder who gets an instant migraine headache at the sight of binoculars; (2) Dropping a mint on binos may not be a bad investment—most top-of-the line models are practically indestructible, come with lifetime warranties, and may be the only binoculars you'll ever need to buy.

Other factors to consider, in addition to price, include magnification, weight, overall image quality, field of view, and minimum close-focus distance. Most of these factors present tradeoffs—that is, making improvements in one factor usually entails making sacrifices in another. For example, if you demand high-quality lenses and a wide field of view, the binoculars you buy will most likely be very heavy. Conversely, if you go for a lightweight compact or even midsized model, you'll generally get a narrower and dimmer image, particularly when viewing in low light.

Surprisingly, no relationship appears to exist between the field of view and the minimum close-focus distance of a given binocular, although remarkably few models are designed with both features in mind. Also, for almost any given binocular design, the 7x or 8x models almost always have a wider field of view, brighter image, and closer focus distance than the comparable 10x models. It is no longer true, however, that 10x binoculars must always be heavier than models with less magnification. Among many top-of-the-line brands, the loss of field or brightness in 10x binoculars is barely discernible and is probably compensated for by the greater detail and resolution that the increased magnification provides.

In the mid- and high-priced categories, our reviewers preferred roof-prism over Porro-prism binoculars, even when the Porro-prism binoculars weighed less. In case you're not sure which design is which, Porro-prism binoculars are easy to distinguish because their ocular (eyepiece) lenses are much closer together than their objective (front) lenses. (These are the common binoculars you've seen everywhere since you were a kid.) With roof-prism binoculars, the eyepieces are directly in line with the objective lenses. Porro-prism binoculars tend to cost less than comparable roof-prism binoculars, but they're usually heavier, bulkier, and less resistant to water. Just to confuse the issue, there's a third binocular category: the reverse-Porro-prism, in which the standard Porro-prism design is inverted, placing the objective lenses closer together than the eyepieces. This is a common design in compact binoculars.

Our reviewers also tended to favor 10x models over comparable lower-magnification models. One of our binocular testers (a crazed Sapsucker team member) declared that 10x magnification was a must, the only other consideration being to get the widest possible field of view. For others, a comfortable feel and moderate weight were all-important. My own bias (and you've heard this before) is also toward higher power. As a teenager, I inherited a pair of World War II–vintage Zeiss 15x50s (why don't they make *those* anymore?), and I've been hooked on high-power binoculars ever since. The extra detail I can pick out on everything from the eagle-shaped speck high overhead to the antwren rummaging in the rainforest canopy to the sparrow popping up in the bushes 20 feet away far outweighs the slight reduction in brightness or field of view.

On the other hand, my brother, who is a professional bird-tour leader and is as blind as I am, prefers 7x binoculars, so I begrudgingly acknowledge that other opinions exist. Note also that I don't recommend buying low-budget 10x binoculars. It's far easier for a manufacturer to produce a decent inexpensive 7x binocular than a 10x model, and any optical flaws in a low-cost instrument will only be magnified by the increased power. With budget binoculars, getting the maximum quality (acceptable image and field of view) usually requires going with 7x or 8x at the most.

To choose the best binoculars for your needs, there's absolutely no substitute for testing a variety of models yourself. As I watched our reviewers frolic in the piles of optics, I was struck by the amazing diversity in their hand sizes, face shapes, and gripping styles—all contributing to a wide range of subjective ratings. For some reviewers, even the highest-priced models just didn't fit right. People who had a narrow interpupillary distance (the space between the pupils of their eyes), for example, found that the barrels of some models could not be moved close enough together to produce a single image. Or the focus wheel was placed awkwardly for their fingers, or the thumb grips were in the wrong place.

Another reason to test binoculars in a store is to evaluate the quality control—sometimes a great deal of variation exists in the quality of individual binoculars, especially in the low-priced models. It's not that unusual for an inexpensive binocular to be out of alignment right out of the box. This means that you should avoid ordering binoculars sight unseen from catalogs or magazines unless you know exactly what you want beforehand *and* the company you deal with has an acceptable policy for returning or exchanging substandard merchandise.

ADDITIONAL TIPS FOR BESPECTACLED BIRDERS

(OR COMPLAINTS ABOUT RUBBER EYECUPS)

If, like me, you no longer dare to venture afield without wearing eyeglasses, choosing binoculars entails some special challenges. If you bird with eyeglasses, pay special attention to the eyeglass ratings in our table. Also, it is doubly important for you to test before you buy. Even the brightest, sharpest optics may provide a dismal, tunnel-vision view for you. The good news is that nearly all binoculars are more eyeglass-friendly now than they were even five years ago. Some manufacturers seem to pay more attention to eye relief and eyecup design than others, however, making me wonder if the engineers at some companies wear glasses and others do not. For example, although fold-down rubber eyecups are now standard issue, some manufacturers apparently don't expect them to be used. Some of the rubber cups were too stiff to fold back easily (Zeiss Night Owls), while others were too

TIM GALLAGHER

A variety of certified Lab bird-heads, ranging from beginning birders to professional ornithologists, took part in our latest binocular evaluations. The chart on pages 32-33 reflects their combined optical wisdom.

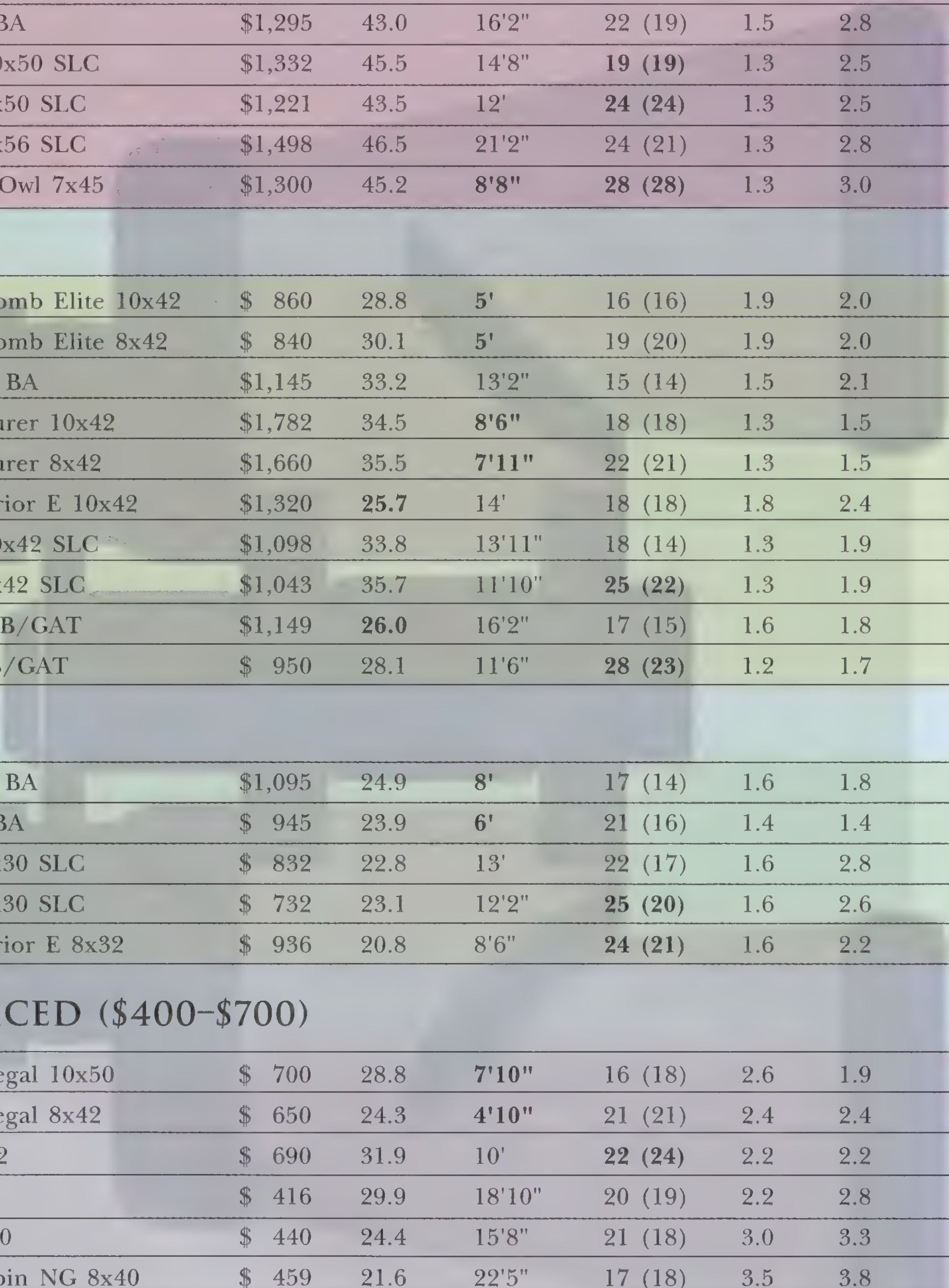
pliable and difficult to keep symmetrical (Swift Ultra Lites). And with many binoculars, the rain guard won't fit if the eyecups are rolled down. In a few cases, the eyecups simply wouldn't stay down and kept rudely popping up in my face. In addition, some eyecups were so deep that when I folded them down there was *too much* eye relief, making it impossible to form an image without the edges blacking out. Finally, if you need to switch frequently between the up and down positions (for example, to accommodate a non-eyeglass-wearing spouse), fold-down eyecups are a real pain—even during our review some of these eyecups showed signs of cracking.

Several optical manufacturers (such as Leica, Pentax, and Fujinon) solved the problem by designing eyecups that pop easily up and down instead of folding. Most eyeglass wearers find these eyecups far superior to the fold-down type, but non-eyeglass-wearers complain that they sometimes snap down unexpectedly. A further innovation is the turn-and-lock eyecups used by Swarovski and also by Nikon in their new roof-prism binoculars. These are fantastic. Not only do they stay where you want them, but you can adjust them to get exactly the right eye relief for your glasses. For example, when I tested the Swarovski 10x42s, I turned the cups slightly back from the fully lowered position to avoid blackout on the edges. I even know some non-eyeglass wearers who turn their cups half-way down to get a wider field of view. My clear message to shoppers as well as manufacturers is to go for the turn-and-lock eyecups; you'll never go back to the fold-down style.

USING THE TABLE

In the table on pages 32–33, we initially grouped the 61 models into price categories, ranging from the top guns, priced at $700 or more, to budget models, costing $200 or less. Two cautionary notes: (1) The manufacturers' suggested retail prices are usually much higher than the actual prices you'll find in stores or catalogs, and the allowable price markdowns vary greatly from company to company; (2) Some virtually identical binoculars are sold under more than one brand name, and their retail prices often differ significantly. For example, Swift Ultra Lite look-alikes appear under the Celestron name at Wild Birds Unlimited stores and again as Eagle Optics Voyagers. The Eagle Optics Ranger series binoculars are essentially the same models as Swift Eaglets and Celestron Regals. In the case of the models "manufactured" by Eagle Optics (many of which are actually built by Celestron), the prices reflect those of a discount retailer rather than more

1999 BINOCULAR REVIEW



	Price	*Weight (oz.)*	*Close focus*	*Field of view*	*Overall image*	*Feel*	*Eyeglasses*	*Category rank*	*Features*
“TOP GUNS” (OVER $700)									
Oversized									
Leica 10x50 BA	$1,345	43.1	14'8"	14 (16)	1.5	2.8	1.7 (s)	7.0	rp, w, c
Leica 8x50 BA	$1,295	43.0	16'2"	22 (19)	1.5	2.8	1.7 (s)	7.3	rp, w, c
Swarovski 10x50 SLC	$1,332	45.5	14'8"	**19 (19)**	1.3	2.5	**1.2 (t)**	3.6	rp, w, c
Swarovski 7x50 SLC	$1,221	43.5	12'	**24 (24)**	1.3	2.5	**1.2 (t)**	8.3	rp, w, c
Swarovski 8x56 SLC	$1,498	46.5	21'2"	24 (21)	1.3	2.8	**1.4 (t)**	8.5	rp, w, c
Zeiss Night Owl 7x45	$1,300	45.2	**8'8"**	**28 (28)**	1.3	3.0	1.7 (r)	8.2	rp, w, c
Full-sized									
Bausch & Lomb Elite 10x42	$ 860	28.8	**5'**	16 (16)	1.9	2.0	2.0 (r)	7.8	rp, w, c
Bausch & Lomb Elite 8x42	$ 840	30.1	**5'**	19 (20)	1.9	2.0	2.0 (r)	9.0	rp, w, c
Leica 10x42 BA	$1,145	33.2	13'2"	15 (14)	1.5	2.1	2.0 (s)	5.8	rp, w, c
Nikon Venturer 10x42	$1,782	34.5	**8'6"**	18 (18)	1.3	1.5	1.2 (t)	**1.6**	rp, w, c
Nikon Venturer 8x42	$1,660	35.5	**7'11"**	22 (21)	1.3	1.5	1.2 (t)	2.8	rp, w, c
Nikon Superior E 10x42	$1,320	**25.7**	14'	18 (18)	1.8	2.4	2.3 (r)	9.0	pp, c
Swarovski 10x42 SLC	$1,098	33.8	13'11"	18 (14)	1.3	1.9	1.6 (t)	4.4	rp, w, c
Swarovski 7x42 SLC	$1,043	35.7	11'10"	**25 (22)**	1.3	1.9	1.4 (t)	7.8	rp, w, c
Zeiss 10x40 B/GAT	$1,149	**26.0**	16'2"	17 (15)	1.6	1.8	1.6 (r)	5.3	rp, w, c
Zeiss 7x42 B/GAT	$ 950	28.1	11'6"	**28 (23)**	1.2	1.7	1.4 (r)	5.5	rp, w, c
Midsized									
Leica 10x32 BA	$1,095	24.9	**8'**	17 (14)	1.6	1.8	3.0 (s)	2.8	rp, w, c
Leica 8x32 BA	$ 945	23.9	**6'**	21 (16)	1.4	1.4	2.0 (s)	2.0	rp, w, c
Swarovski 8x30 SLC	$ 832	22.8	13'	22 (17)	1.6	2.8	1.7 (t)	2.6	rp, w, c
Swarovski 7x30 SLC	$ 732	23.1	12'2"	**25 (20)**	1.6	2.6	1.7 (t)	3.8	rp, w, c
Nikon Superior E 8x32	$ 936	20.8	8'6"	**24 (21)**	1.6	2.2	2.7 (r)	3.8	pp, c
MIDPRICED ($400–$700)									
Celestron Regal 10x50	$ 700	28.8	**7'10"**	16 (18)	2.6	1.9	2.7 (r)	3.6	rp, w, c
Celestron Regal 8x42	$ 650	24.3	**4'10"**	21 (21)	2.4	2.4	3.0 (r)	4.4	rp, w, c
Fujinon 7x42	$ 690	31.9	10'	**22 (24)**	2.2	2.2	3.0 (s)	3.7	rp, w, c
Kowa 8x45	$ 416	29.9	18'10"	20 (19)	2.2	2.8	3.0 (r)	**3.2**	rp, w, c
Mirador 8x40	$ 440	24.4	15'8"	21 (18)	3.0	3.3	3.0 (r)	7.7	pp, c
Optolyth Alpin NG 8x40	$ 459	21.6	22'5"	17 (18)	3.5	3.8	3.3 (r)	9.0	pp, c
Optolyth Alpin NG 7x42	$ 479	21.5	25'	19 (18)	3.5	3.8	3.3 (r)	9.4	pp, c
Pentax 10x42 DCF HR	$ 550	24.8	15'	16 (17)	3.2	3.1	2.7 (r)	7.6	rp, w, c
Swift Viceroy 10x42	$ 690	25.0	**4'10"**	15 (16)	3.2	2.6	2.7 (r)	6.1	rp, w, c
Swift Eaglet 7x36	$ 680	21.5	**4'**	21 (23)	2.1	2.3	2.7 (r)	4.4	rp, w, c
Swift Ultralite 10x42	$ 460	20.9	16'2"	16 (14)	2.7	3.0	3.2 (r)	6.3	pp, c
Swift Ultralite 8x42	$ 440	21.1	11'4"	18 (18)	2.7	3.0	3.0 (r)	5.6	pp, c
Zeiss 8x30	$ 450	**15.5**	13'2"	19 (18)	2.6	4.0	3.3 (r)	6.0	rp, w, c

ILLUSTRATION BY MICHAEL DIGIORGIO

	Price	Weight (oz.)	Close focus	Field of view	Overall image	Feel	Eyeglasses	Category rank	Features
LOW-PRICED ($200–$400)									
Celestron Ultima 8x40	$ 340	20.9	14'	21 (18)	3.0	3.5	3.0 (r)	5.7	pp
Celestron Ultima 8x32	$ 325	19.2	13'10"	19 (17)	3.5	3.5	3.0 (r)	6.7	pp
Celestron Adventurer 8x32	$ 240	25.2	10'3"	14 (17)	4.0	4.0	3.5 (r)	7.8	pp
Eagle Optics Ranger 10x42	$ 348	25.0	**5'**	16 (16)	2.3	2.7	3.0 (r)	2.3	rp, w, c
Eagle Optics Ranger 7x36	$ 288	22.4	**4'**	**22 (23)**	2.2	2.3	3.0 (r)	**1.7**	rp, w, c
Eagle Optics Voyager 9.5x44	$ 298	24.9	15'2"	19 (16)	3.0	3.0	3.0 (r)	2.3	pp, c
Mirador 7x42	$ 377	22.2	18'6"	**24 (21)**	3.0	4.3	3.5 (r)	6.3	pp, c
Pentax 10x50 PCF	$ 274	34.5	17'10"	14 (16)	3.3	4.3	3.0 (r)	6.0	pp, c
WB Unlimited (Celestron) 8x42	$ 370	20.7	13'6"	19 (18)	2.7	3.0	3.0 (r)	5.6	pp, c
BUDGET (UNDER $200)									
Bushnell 8x42 WA	$ 119	26.5	13'6"	19 (19)	4.0	3.6	3.0 (r)	6.4	pp, c
Celestron Bird Watcher 10x50	$ 180	28.3	17'6"	14 (16)	3.5	4.0	3.7 (r)	6.0	pp, c
Celestron Bird Watcher 8x40	$ 170	24.2	10'10"	18 (17)	3.9	3.3	3.7 (r)	6.6	pp, c
Celestron Bird Watcher 7x35	$ 160	21.9	**8'**	**22 (21)**	4.0	3.4	3.7 (r)	5.4	pp, c
Celestron Enduro 8x40	$ 80	24.3	12'4"	21 (15)	4.8	4.2	4.3 (r)	9.4	pp, c
Celestron Enduro 7x35	$ 80	21.2	15'	20 (18)	4.4	4.4	4.7 (r)	9.6	pp, c
Eagle Optics Voyager 8x42	$ 168	21.6	11'6"	21 (19)	3.4	3.0	3.7 (r)	3.4	pp, c
Eagle Optics Ranger 8x32	$ 158	19.6	12'	20 (18)	3.4	2.8	3.3 (r)	**2.4**	pp, c
Nikon Egret II 8x40	$ 170	25.4	13'6"	19 (16)	3.4	3.0	3.7 (r)	3.2	pp, c
Nikon Naturalist IV 7x35	$ 144	23.8	**8'10"**	**30 (21)**	3.8	2.8	3.0 (r)	3.0	pp, c
Mirador 8x32	$ 188	21.7	**7'2"**	18 (14)	4.3	3.3	4.0 (r)	6.3	pp, c
COMPACT									
Bausch & Lomb Custom 7x26	$ 279	**7.2**	**7'11"**	**20 (19)**	2.0	2.2	2.8 (r)	**1.4**	rpp, c
WB Unlimited (Celestron) 7x25	$ 99	11.0	9'6"	18 (16)	3.4	2.5	3.8 (r)	5.3	rpp, c
Eagle Optics Ranger 8x24	$ 144	8.0	9'	17 (13)	3.0	3.6	3.5 (r)	5.0	rp, c
Eagle Optics 8x24 UCF (Pentax)	$ 108	12.9	**5'**	18 (14)	3.2	3.2	3.3 (s)	4.8	rpp, c
Eagle Optics Voyager 8x25	$ 59	11.5	9'10"	17 (14)	2.8	2.4	2.8 (r)	2.5	rpp, c
Nikon Diplomat 8x23	$ 272	10.5	**7'5"**	16 (16)	2.8	2.3	3.3 (r)	2.6	rpp, c
Swift Micron 8x25	$ 130	9.4	9'4"	17 (14)	3.6	3.4	4.0 (r)	5.6	rpp, c

Price: Manufacturer's suggested retail price. Actual prices are often much lower.

Field of View: Measured as width of field (inches) seen from a distance of 15 feet. ( ) = field of view with eyeglasses.

Overall image: Compared across all models (scale of 1–5, with 1 being the best).

Feel: Compared across all models (scale of 1–5, with 1 being the best).

Eyeglasses: Overall "friendliness" to eyeglass wearers (scale of 1–5, with 1 being the best), r = rubber eyecups, s = snapping eyecups, t = turning eyecups.

Category rank: Overall subjective ranking by 10 reviewers within price/size category (the lower the number, the better the ranking).

Features: rp = roof prism, pp = porro prism, rpp = reverse porro prism, w = waterproof (sealed), c = case.

Please note: Numbers in bold type represent noteworthy ratings within a given category and price level.

typical manufacturers' suggested retail prices—which is great for binocular shoppers but makes it tricky for us to make direct comparisons based on price categories.

Each model listed in the table was weighed (with the strap on) on the same scale by *Living Bird* editor-in-chief Tim Gallagher, and I personally measured all minimum-close-focus distances and fields of view. To accomplish the latter, I stood 15 feet from a tape measure mounted on a wall at eye level and recorded the width of the visible field, both with my glasses on and without them. This measure, although undoubtedly correlated to the "feet at 1,000 yards" figure frequently cited, is, I hope, more relevant for birders—field of view is mostly a factor when a bird pops up quickly close to you or in dense vegetation.

I tried to capture as much of the subjective nature of this review as possible in the table. I asked each reviewer to provide four ratings for each model tested. The first three were rated on a scale of 1 to 5 (with 1 being excellent and 5 being poor) and included "overall image," which took into account sharpness, brightness, center-to-edge focus, and other viewing qualities; "feel," which rated the ergonomics, weight, ease of focus, diopter adjustment, and other handling qualities; and "eyeglass friendliness" (if the reviewer was an eyeglass wearer), rating the degree of tunnel vision the particular binoculars caused, the quality of the eyecups, and so on. For the fourth measure, each reviewer ranked the models *within each price category* in terms of how likely he or she was to actually buy them. The numbers in the table are average ratings or ranks, based on the six to eight reviewers who tested each model. For example, in the midpriced category the 12 models were given ranks from 1 to 12, and the averages of these ranks ranged from 3.2 to 9.4.

TOP GUNS

The competition is fierce in this top-of-the-line category. Only a decade ago, just one or two models dominated the entire market. Today, more than 20 binoculars vie for the attention of serious birders, offering superb optics, a wide range of designs and styles, and a host of innovative new features. If any of these bins ended up on your next birthday gift list, you couldn't go wrong. But hey, for that kind of money you might as well be picky, and among our reviewers opinions were flying around like a covey of flushed quail. The ratings for feel and style were based largely on the personal preference of each reviewer, but several important distinctions came to light. With few differences in optical quality to worry about, your choice will probably depend more on factors such as weight, power, field of view, and close-focus distance. For the latter two factors, you may want to compare the various models in the table, to select the right combination to suit your needs.

In terms of pure image quality, the original Zeiss 7x42s still reign, along with all of the full- and "oversized" Swarovskis, Zeiss Night Owls, and the new Nikon Venturers. The view of even an ordinary male Mallard on Sapsucker Woods pond through any of these binoculars is simply breathtaking. The Leicas we tested, although similar in design to the Swarovskis, seemed slightly less bright and crisp than their counterparts, except for the midsized 8x32s. For close-focus capability, nothing beat the Bausch and Lomb Elites, although the Nikon Venturers were close. If you really do watch butterflies, or need to examine your toes at close range, the Elites are probably your best choice, even though their image quality is not quite equal to that of the others in this category. And for widest field of view, Zeiss far outdid its competitors with both the older 7x42 and the new 7x45 models.

If you're after the absolutely highest quality 10x binoculars available, in my opinion it's now a tossup between the Swarovski 10x50s and the Nikon Venturer 10x42s. When a Swarovski representative handed me a pair of the nearly 3-pound 10x50s last year at Cape May, my reaction was "no way would I ever carry these." Then, when a box arrived at my office and I focused on the chickadees and House Finches outside my window, I knew instantly that I could never go back to my lighter 10x42s. I can honestly say that after 40 years of birding, these binoculars give me the finest, crispest image I can imagine and definitely the widest 10x field of view available for eyeglass wearers. If you value your vertebrae, however, I still would not recommend carrying these behemoths around your neck. The comparable Leica 10x50s, although optically excellent, are not as well designed for use with eyeglasses and give me an unacceptable tunnel-vision image.

I eagerly reached for the much-acclaimed Nikon Venturers as soon as they arrived—and I was not disappointed. The image they provided was virtually identical to that of the Swarovskis, and the field of view was only slightly narrower. When I focused them down to 8 1/2 feet, I was truly impressed. These binoculars weigh 25 percent less than my Swarovskis, and they felt so good in my hands, I found myself reaching for the Nikons whenever I spotted a bird. Then one evening I went looking for Short-eared Owls in some nearby fields and scanned with the Nikons until nearly dark. About the time I could no longer make out a cornstalk against the snow, I reached for the Swarovskis and was amazed at their brightness. The 10x50s allowed me to scan for five full minutes longer than I could with the Nikons (but I still couldn't find any owls). So under these extreme conditions, the Swarovskis did outperform the Nikons—and this could be critical if you're trying to make out a Piping Plover on its nest on a New Jersey beach at 11:00 P.M. during the World Series of Birding. But I believe that Nikon has set a new standard by offering a superb image in a much friendlier package, and I hope that other manufacturers will take up the challenge and continue to develop better and better binoculars.

Across all of the full- and oversized models, these Nikon 10x42 Venturers were clearly the top choice among our reviewers. The combination of extra-crisp image, moderate weight, wonderful feel, turn-and-lock eyecups, and excellent close-focusing capability allows these binoculars to buck the recent trend toward ridiculously heavy optics. Our reviewers didn't like the highly touted Nikon Superior E Porro prisms as much, however. The Swarovski

10x models ranked next in terms of overall ratings, followed by the old standby Zeiss 10x40s and 7x42s. In spite of their exceptionally bright and wide field of view, the Zeiss Night Owls did not achieve a high ranking; our reviewers were critical of their extreme weight, poor balance, and stiff rubber eyecups. Our advice to Zeiss is to simply modernize their tried-and-true models—as one reviewer stated: "Optically, the 7x42s are still top dog in my mind. I just wish they would make a more ergonomically designed housing and eliminate the external focus." At a suggested retail price of $800, these binoculars are a steal. Another disappointment was the Swarovski 8x56s, which weighed in at a neck-aching 46.5 ounces, had a narrow tunnel view, and, with a minimum close focus of 20 feet, seemed to represent a move in the wrong direction for a company that has otherwise paid close attention to the desires of birders.

When we separately considered the six midsized models, the Leica 8x32s were clear favorites, with a very sharp image and nice feel (a bit reminiscent of their predecessors, the beloved old Leitz Trinovids). The Swarovski 8x30s and 7x30s are optically similar to the Leicas, but their awkward design forces you to focus with your ring finger or pinky. Still, if you wear glasses, these Swarovski binoculars provide less of a tunnel-view image, and they have the superior turn-and-lock eyecups, making them a better choice.

All in all, these midsized models offer superb optical quality at about half the size and weight of their larger counterparts, and they may represent the perfect compromise if a wide, bright field is not your most important consideration.

MID- AND LOW-PRICED CHOICES

Okay, enough talk about all those binoculars that you can't really afford. If you're looking for good binoculars at very reasonable prices, there is finally a range of solid options. Although no single model stood out in the mid-priced category, our reviewers were impressed with the Fujinon and Kowa binoculars, as well as the Swift Eaglets and Celestron Regals. All of these offer roof-prism design and very good image quality. The Fujinons have snapping eyecups and an overall feel like the highest-priced models. I personally liked the Celestron Regal 10x50s best—although they're not quite up to the optical quality of the top guns, their wide field of view, short minimum close focus (about 8 feet), fully sealed and waterproof body, and sleek, lightweight feel were impressive. These binoculars are also marketed as Eagle Optics Rangers, and they're a phenomenal bargain at one-third the price of my Swarovskis. Swift Ultra Lites, which not long ago ruled the midpriced market, no longer rate as highly as these other models in terms of image quality or feel.

In the $200 to $400 range, the Ranger 7x36s by Eagle Optics were clearly the first choice of our reviewers. These binoculars are waterproof, provide a sharp image, and their price is unbeatable, making them probably the best buy of the entire lot. The other Eagle Optics models we tested were also superior to anything else in this category. Somewhat disappointing were the Zeiss 8x30s, which did not live up to the company's fine reputation and standards but are still a decent choice within this price range. Both Optolyth samples we tested were badly out of alignment, contributing to their low rankings and making us wonder about quality control. The image provided by the Pentax 10x50s seemed darker than that of other 10x50s, plus they were poorly balanced and couldn't focus closer than about 18 feet.

BUDGET BARGAINS AND COMPACTS

In the under $200 category, the Eagle Optics Ranger 8x32 was the top choice, followed by the Eagle Optics Voyager 8x42 and the two Nikon models. These all offer an acceptable image for general birding and are a vast improvement over the majority of budget models we've tested in the past. The Nikon Naturalist IV gave the best view with my eyeglasses on and an incredibly wide field without glasses. At the bottom of the list, the Celestron Enduros elicited visible pain on the faces of the reviewers—I wouldn't wish these on any beginning birder.

All but one of the compact models we tested fell in the budget price range. The one exception, Bausch and Lomb's 7x26 Custom Compact, is still the only compact model I'd recommend for birding. I'm always amazed when I look through these. Their sharp, bright image and surprisingly wide field of view (even with glasses on) are roughly equal to those of the company's much larger and pricier 8x42 Elites. Our reviewers' second choice was split between the Nikon Diplomat 8x23s and Eagle Optics Voyager 8x25s, which both performed much better than the remaining compacts. If you like compacts and don't wear glasses, the Voyagers are certainly the best buy in their price range; in fact, in terms of image quality and feel, these surpassed many of the low- and even mid-priced models. They also may be a perfect choice for kids.

THE FINAL WORD

I applaud the many optical manufacturers who provided such a wide range of binoculars in every size, shape, and price range. I know there are quite a few other models out there that we didn't test, but we'll try to cover many of them in future "Critics' Corner" columns. My final words of advice to binocular shoppers are these: (1) Determine your spending limit, then narrow your choices by selecting the power, weight, and specification ranges that best fit your needs; (2) Test as many models as possible to find the ones that work best for you; (3) Go for the highest optical quality you can afford—in the long run, all other factors will be secondary; (4) If you're shopping for budget binoculars, don't peek through the $1,000 models on the next shelf—you may have to go to the bank for a loan; and (5) No matter what you buy, get out there and find some good birds. ■

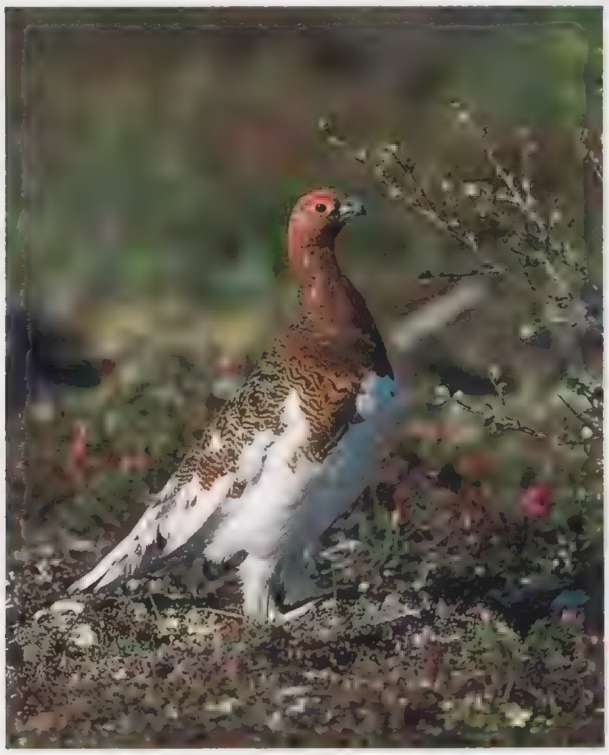
Picture Perfect

BEATING MURPHY'S LAW

Text and photograph by Tim Gallagher

Be prepared and avoid the common pitfalls of bird photography

Everyone's heard of Murphy's Law: "Whatever can go wrong will go wrong." It's a simple fact of life. If you drop an open-faced peanut butter sandwich, chances are it will land face-down in the dirt. Murphy's Law also rears its ugly head in bird photography. You've been sitting in a blind next to a Ruffed Grouse's favorite drumming log for most of the night, hoping to be there when the bird makes his explosive courting display. Exhausted, you slump over your tripod, resting your head on the chilled metal. Then you hear it, just a few feet from your face: a wildy drumming grouse. And the light is beautiful. You squeeze the shutter release ever so gently. *Bzzzzz.* And you hear the sick sound of your batteries giving their last gasp of electricity before departing this life, and you just know: you've blown a fabulous photographic moment.



As the sun broke through and this male Willow Ptarmigan stood up, my camera jammed—no problem, I switched to my spare camera and got the shot.

It's happened to me. And, trust me, it'll happen to you, too, if you photograph birds long enough. Murphy's Law. There's no answer to why things happen the way they do, when they do. The only possible way to avoid—or at least minimize—the effects of Murphy's Law is to apply the Boy Scout motto: "Be Prepared." If you always strive to be ready for any misfortune (or good fortune) that might occur in the field, you'll certainly boost your success ratio at bird photography.

The example of the blown Ruffed Grouse photo op is a case in point. Always be aware of the condition of your camera batteries. Battery testers are inexpensive and small enough to carry in your camera bag. Never go to an important photo shoot with batteries that are suspect. Take them out and test them. If they're marginal, replace them. And if you have an extra camera body, always carry it with you. Then, if your camera malfunctions, it's a snap to replace it with your standby. My extra camera body has saved me more than once. The picture of the Willow Ptarmigan at left is a case in point. I spent several hours one afternoon in northern Canada trying to get decent pictures of ptarmigans. It was a dismal effort at first. The light wasn't right—the day was gray and bleak. And the birds were . . . well, being boring. I wanted to get great behavior shots, like a male strutting or at least foraging in an interesting way. But these birds just sat around like dumpy chickens.

Then it happened: the sun burst out of the clouds and spectacular arctic light shone down all around me, brilliantly illuminating the birds and their tundra habitat. Like me, the ptarmigans responded at once to the infusion of warmth and light. They stretched to full height and strode over to some shrubs, reaching high to eat some berries. I'd just finished a roll of film when the sun came out, and I quickly loaded a new one. Aiming at the male, I checked the focus and exposure, framed the shot, and squeezed the shutter release. Nothing happened. I found out later that in my hurry I'd misloaded the film and it jammed, but I didn't take time to check it out then. I merely reached into the pocket of my backpack where I always keep my extra camera body and swapped it with the one that was attached to my telephoto lens. The whole motion took maybe 10 seconds at most, and I was back in action. Before the sun disappeared behind cloud cover a few minutes later, I'd shot an entire roll of film. And they were the only good pictures of ptarmigans I took on the entire trip.

The point is, an unforeseen complication arose and I was able to deal with it instantly because I had the piece of spare equipment I needed and knew exactly where it was. I've screwed up so many times in bird photography that I've forced myself to become very methodical about the way I do things in the field. I have a backpack that I always keep loaded with camera equipment, ready to pick up and go at a moment's notice. The main item I carry is my 500mm f/4 lens, always attached to a camera body. And I keep a quick-release tripod mount screwed to the telephoto lens at all times. If an interesting subject appears, it only takes a minute to get the camera and lens out, mount it on a tripod, and start shooting.

You might prefer to use a fly-fishing-style vest. The numerous pockets on the front of a vest hold a lot of film and equipment. When you use a camera bag, backpack, or vest, the trick is to assign pockets to every item and never vary the order. Develop a system that works for you, then stay with it, and you'll never have to search for something at a crucial moment.

Always carry a sufficient supply of film and fresh batteries with you, especially when you're traveling. You can always bring leftover film back home, but it's sometimes hard to find when you're on the road. And if you're about to go into the field and you notice that your camera only has five or six shots left on the roll of film, replace it with a fresh roll. Nothing's more annoying than getting into a good photographic situation and having to change film immediately.

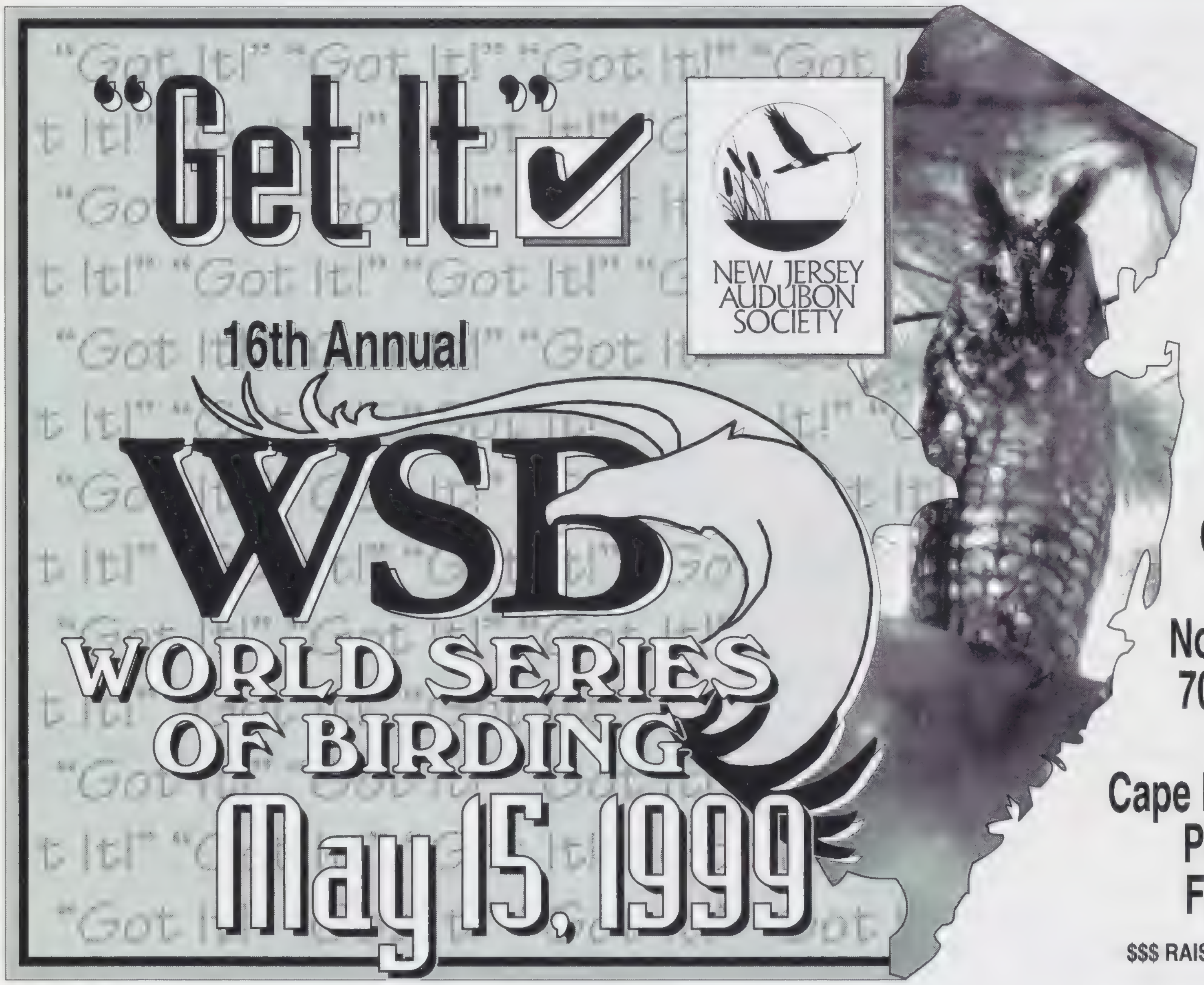
No surefire way exists to beat Murphy's Law, but if you're always prepared, at least you'll be ready when wonderful photographic opportunities come your way. ■

Looking for a great bird slide?

SHORT-BILLED DOWITCHER BY TIM GALLAGHER

The Cornell Lab of Ornithology has a vast collection of excellent bird slides, available individually or in specially priced sets. Use our slides to fill gaps in your own slide shows or purchase complete sets, some of which include written scripts or taped narrations and bird sounds. Photographs are also available for commercial use. Write today for our free catalog or visit our web site at http://birds.cornell.edu.

CORNELL LAB OF ORNITHOLOGY
159 Sapsucker Woods Road, Ithaca, New York 14850
Phone: (607) 254-BIRD e-mail: djw16@cornell.edu



To learn how to participate or become a team sponsor, call or write:

**Cape May Bird Observatory
Northwood Center
701 E. Lake Drive
P.O. Box 3
Cape May Point, NJ 08212
Ph: 609.884.2736
Fx: 609.884.6052**

$$$ RAISED SUPPORTS CONSERVATION

OF KIDS, BIRDS, AND MODEL AIRPLANES

By Pete Dunne

We—meaning the board of directors of a birding group—were meeting in an airport hotel, having a lengthy discussion about youth and birding. Why more young people were not getting involved in birding. How the future of this activity depended upon early recruitment. And how young adults might be spared lives of indolence, violence, and computer-joy-stick-related injuries if only they would discover what we had discovered: The Joy of Birding.

We were pretty serious about this topic (as adults tend to be). Our discussion had exhausted the recruitment potential of young birder clubs/camps/outings/newsletters and web sites. We'd moved on to mentor programs and essay contests. But having crossed a critical threshold in the coffee ingestion gradient, I excused myself and carried the topic with me into the men's room. Another man was there ahead of me.

"You're from that bird-watching group, right?" he said.

"Uh huh," I replied.

"I'm with the [choose one] American, North American, International, Intergalactic Association of Model Airplane [choose one] Builders, Designers, Flyers." He continued, "We're having our annual meeting."

"Terrific," I said, concluding that this guy and I could have nothing in common . . . but I was wrong.

"We're discussing ways of getting more young people involved in model airplanes," he said. "You know it's important for young people to find wholesome activities, and unless more kids get interested in flying model airplanes, this hobby is just going to . . ."

I walked away refreshed—on more counts than one—and found myself a good deal more relaxed about the youth/birding problem.

Don't get me wrong. I'm not saying that kids shouldn't be encouraged to go birding. But when *I* was a kid, if some well-intentioned adult wearing a sincere adult grin had said, "Pete, you should go bird watching because it's fun and will help make you a better person, the suggestion would have claimed first place on my short list of LAST THINGS I WILL EVER DO.

Maybe times have changed, but when I was growing up, adults ran everything—including my life. School, chores, meals, TV time. There was only one thing the adults didn't control. That was birding.

So when I got home from school I ran in the front door, grabbed my binoculars, and ran out into the woods before any adults could interfere.

In fact, one of the primary reasons I started birding was to get *away* from adults. So I have a suggestion to be used by adults who are worried about the future of birding and want to get young people involved. Give a kid binoculars and a bird book. And walk away.

Don't organize anything. Don't sweat the details. Just give a kid the catalytic tools needed to engage birds. Then be a good catalyst and disappear.

Binoculars and a field guide. One confers supernatural intimacy. The other unlocks the secrets of bird identity. You've got the flint and the steel. The natural inquisitiveness of children is the tinder.

The only other ingredient needed to kindle a flame is air—*space*; the freedom that lets young minds engage birds on their own terms, at a level that excites and invites them. I have a lot of faith in the capacity of birds to captivate—and a lot of childhood memories to support this faith.

Don't worry if eager young birders are not flocking to your monthly bird meetings. Remember, they don't drive and they don't have the scheduling latitude of adults.

Don't worry if the majority of teens seem dispassionate about going on Saturday morning bird walks. There are passions and there are passions. You may have forgotten this, but you can trust teenagers to know where the accent in passion goes.

Have a little faith. Have a little patience. Have a long-term recruitment strategy that begins with giving a kid binoculars, a bird book, and a bond to call his or her own. Someday, after the kids are raised and the career ladder has been climbed, that one-time-young birder will remember how much fun it was to look for birds, and wonder, maybe . . . whether there are any organizations for bird watching. Like that organization for people who fly model airplanes. The National, International, Intergalactic something or other that the guy I met in the men's room was talking about the other day. ■

ILLUSTRATION BY JEFF SIPPLE

Ultra Lite, Ultra Bright

Swift ULTRA LITES® are ultra bright to bring out the finest details on each bird, every time.

The high resolving power in each Ultra Lite means that the smallest detail is always crisp, clear and bright. The fully coated lenses are color corrected to capture all the subtle colors and at only 21 ounces you can carry these glasses all day long without fatigue.

"Ounce for utilitarian ounce, penny for performance-minded penny, you cannot buy a better binocular"
PETE DUNNE - ORIGINATOR
WORLD SERIES OF BIRDING

SWIFT®

761 Ultra Lite
8x, 42 ZCF

762 Ultra Lite
10x, 42 ZWCF

763 Ultra Lite
8x, 32 ZWCF

SWIFT INSTRUMENTS, INC.

Swift Instruments supports INTERNATIONAL MIGRATORY BIRD DAY

952 Dorchester Avenue, Boston, MA 02125 • Ph. 617-436-2960 • Web: www.swift-optics.com
In Canada: Vision Canada LTD, Pickering, Ontario L1W 3S1 • Ph. 905-420-8219

A Guide to the Birds of India

Pakistan, Nepal, Bangladesh, Bhutan, Sri Lanka, and the Maldives

Richard Grimmett, Carol Inskipp, and Tim Inskipp

Birdwatchers have long waited for a comprehensive and up-to-date identification guide for the Indian subcontinent. This exhaustively researched and beautifully produced book will finally meet that need. Written by three leading experts on the region, the guide is firmly rooted in the authors' extensive field experience. It provides complete information on 1,300 species of birds. This is a landmark publication that will be enthusiastically welcomed by all birdwatchers.

153 color plates. 1270 maps.
Cloth $75.00
prepublication price through July 1, 1999
$85.00 thereafter ISBN 0-691-00687-3
Not available from Princeton in the U.K. or E.U.

Starlings and Mynas

Chris Feare and Adrian Craig

The starling family contains some of the most common and some of the rarest birds in the world—ranging from the ubiquitous Common Starling to species restricted to single islands in the South Pacific. *Starlings and Mynas* is the first comprehensive, one-volume guide to all 114 members of the family.

32 color plates. 107 maps.
Cloth $39.50 ISBN 0-691-00496-X
Not available from Princeton in the U.K. or E.U.

New World Blackbirds

The Icterids

Alvaro Jaramillo and Peter Burke

New World Blackbirds is a comprehensive guide to the 103 members of the family *Icteridae*. The icterids are a diverse family, ranging throughout the Americas from Alaska to the Caribbean and south to Cape Horn.

The highly detailed color plates in this book depict all the species and many subspecies and age types never illustrated before. The book also contains over 100 color range maps as well as black-and-white illustrations to aid identification. Clearly written and exhaustively researched, this book will be the standard reference work for this major family of birds.

39 color plates. 103 maps. 25 line drawings.
Cloth $49.50 ISBN 0-691-00680-6
Due April
Not available from Princeton in the U.K. or E.U.

Illustration from *A Guide to the Birds of India*

Princeton University Press

AT FINE BOOKSTORES OR CALL 800-777-4726 • HTTP: //PUP.PRINCETON.EDU

LIVING BIRD

For the Study and Conservation of Birds

SUMMER 1999

SAPSUCKERS' DELIGHT

Clockwise from top John Fitzpatrick,
Ken Rosenberg, Steve Kelling and Kevin McGowan

The "Sapsuckers" birding team from The Cornell Lab of Ornithology, Ithaca, NY, <www.birds.cornell.edu> knows optics. Optics define their birding and wildlife observations. They even publish evaluation studies covering binoculars or spotting scopes in the lab's magazine "Living Bird". They consider all good optics. Some are very good; others are even better.

For their personal and professional use, they use Swarovski HD spotting scopes and 10X50 SLC binoculars. According to team members, "The brilliant resolution, image contrast, brightness, rugged waterproof integrity and overall performance of Swarovski optics are generally superior to any other brands we have tested. Also, the Swarovski Optik Limited Lifetime Warranty* and speedy repair service is the very best. Check it out."

Now don't just accept the "Sapsuckers' Delight" as gospel truth. Visit your nearest Swarovski Optik dealer and see for yourself or ask a friend who owns a Swarovski spotting scope or binocular. Call 800-426-3089 or visit

www.swarovskioptik.com

10X50MM SLC BINOCULAR

ST-80 HD SPOTTING SCOPE

SWAROVSKI
OPTIK
1949-1999

With The Eyes of a Hawk

Tom Vezo

LAB'S MASCOT

Swarovski Optik North America, Ltd.
One Wholesale Way, Cranston, RI 02920

*Original warranty card must be postmarked within 30 days of purchase from an authorized Swarovski dealer in good standing
Entire product must be returned with warranty claim by registered warranty holder.

A Publication of the
Cornell Laboratory of Ornithology

LIVING BIRD

SUMMER 1999 VOLUME 18 NUMBER 3

GREETINGS FROM SAPSUCKER WOODS

Thirty years ago, the Peregrine Falcon was in dire trouble. Ravaged by DDT contamination, its numbers were plummeting drastically in North America, and no end to the decline was in sight. But in 1970, Cornell professor Tom Cade founded an organization called The Peregrine Fund and launched a massive reintroduction program. Thanks to that effort and the help of hundreds of dedicated people across the continent, the Peregrine Falcon made a stunning recovery and is now slated to be removed from the Endangered Species List (see page 8).

The early days of the peregrine recovery were a memorable time for everyone who took part in it. In the late 1970s, soon after graduating from college, I worked for the Santa Cruz Predatory Bird Research Group (a West Coast affiliate of The Peregrine Fund) in a small facility in an old rock quarry on the picturesque University of California campus. I made several lifelong friends there—including artist John Schmitt, who painted the trogon illustrations in this issue (page 18).

Like many of the staff and volunteers who worked on the peregrine recovery, this experience changed our lives, setting us off in directions we may not otherwise have taken. The road I took eventually led me to the Lab of Ornithology, where I could help promote conservation through our publications, whereas John went on to work directly with other endangered birds. A self-trained field biologist, he spent five years with the California Condor Recovery Team and also took part in research expeditions to South America, Borneo, India, and other faraway places.

In this issue, we're proud to honor everyone who played a part in the Peregrine Falcon reintroduction. Without their unceasing dedication, this remarkable bird's recovery would not have been possible.

Tim Gallagher
Editor-in-Chief

8 MISSION ACCOMPLISHED *by Tim Gallagher*
In a last-ditch effort to rescue the American Peregrine Falcon, Cornell professor Tom Cade launched the most ambitious endangered species recovery program ever attempted. Now, nearly three decades later, this amazing bird is slated to be removed from the Endangered Species List.

18 MARVELOUS, MYSTICAL, TROPICAL TROGONS
by Paul Johnsgard
Without major conservation efforts on behalf of these birds, many species of trogons and quetzals may soon vanish from the earth.

24 THE THORNBIRDS *by John Cancalosi*
Coping with the prickly problems of life.

32 FROM WATERFOWL TO WARBLERS *by Kristi G. Streiffert*
National wildlife refuge managers across the nation are finally realizing that ducks are not the only game in town.

Departments

4 LETTERS
5 BIRDNEWS
39 CRITICS' CORNER

Columns

6 FLYING FIELD *by Mel White*
Tropical teamwork.

43 IN THE FIELD *by Jack Connor*
The power of partnership

46 THE CATBIRD SEAT *by Pete Dunne*
A six-pack of fame.

Cover: A Peregrine Falcon prepares to take off at New York's Jamaica Bay. Just 25 years ago, this species no longer nested east of the Mississippi River in America. But thanks to an aggressive recovery program, the bird's numbers are now booming here. See article on page 8. Photograph by Arthur Morris/Birds as Art.

Right: An appropriate symbol of success, this soon-to-fledge Peregrine Falcon is one of hundreds hatched at wild nests across North America. Photograph by Tim Gallagher.

Back Cover: This Cactus Wren seems right at home in the forbidding spikes of a cholla cactus. See page 24. Photograph by John Cancalosi.

LIVING BIRD

SUMMER 1999 VOLUME 18 NUMBER 3

Editorial Staff

Editor-in-Chief: Tim Gallagher
Design Director: Kat Dalton
Associate Editor: Leslie Intemann
Technical Editors: Kevin J. McGowan
Kenneth V. Rosenberg
Publications Assistant: Patty Porupski
Contributing Editors: Jack Connor
Pete Dunne
Mel White
David S. Wilcove
Advertising Manager: Barbara Guttridge

Administrative Staff

Louis Agassiz Fuertes Director
John W. Fitzpatrick

Associate Director
Scott Sutcliffe

Director, Education/Citizen Science
Richard E. Bonney, Jr.

Director, Library of Natural Sounds
Jack W. Bradbury

Director, Bioacoustics Research Program
Christopher W. Clark

Director, Bird Population Studies
André A. Dhondt

Director, Conservation Science
John W. Fitzpatrick

Director, Publications
Tim Gallagher

Curatorial Associate, Systematics & Collections
Kevin J. McGowan

Director, Operations
Carol Pyhtila

Administrative Board

Edwin H. Morgens, Chair

Ellen G. Adelson
E. Edward Bruce
Peter J. Bruns
Thomas E. Donnelley II
Jean W. Douglas
Theodore L. Eliot, Jr.
Jane C. Engel
Cutberto Garza (ex-officio)
Mary P. Hines
Bruce S. Howard
Ronald R. Hoy
Imogene P. Johnson
Mary Johnston
Austin H. Kiplinger
Randolph S. Little
Linda R. Macaulay
Francis P. Pandolfi
Wendy J. Paulson
Olin Sewall Pettingill, Jr.
Elizabeth T. Rawlings
Frank H. T. Rhodes
Carol U. Sisler
Stanley A. Temple
Charles E. Treman, Jr.
Joseph H. Williams
David W. Winkler

Living Bird, ISSN 1059-521-X, is published in January, April, July, and October by the Cornell Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Telephone: (607) 254-BIRD. *Living Bird* is free to members of the Laboratory, a nonprofit, membership organization. Our mission: "To interpret and conserve the earth's biological diversity through research, education, and citizen science focused on birds." For more information please write to our Membership Department. Membership is $35 a year. The Laboratory assumes no responsibility for unsolicited photographs or manuscripts.

Visit our web site at <http://birds.cornell.edu>.

Printing by Brodock Press, Utica, New York.
Printed on recycled paper.

Letters

ALEXANDER WILSON

SOUTH OF THE BORDER

I really enjoyed Marcia Bonta's article, "Birding in America . . . in the 18th Century" (Winter 1999). I am a Mexican subscriber to your magazine and am particularly fond of articles relating to migrants or birds that are found in Mexico as well as in the other parts of North America. Peter Kalm's writings about Whip-poor-wills were very interesting. I live in the northwestern part of Mexico City, in a residential area that still has small wooded areas and ravines. Every year in winter and spring, Whip-poor-wills make themselves heard on a few nights. This year, however, an individual has settled on the trees right next to our apartment building, singing incessantly throughout the night. Close by, in the western part of Chapultepec Park, you can hear several Whip-poor-wills singing simultaneously if you drive through at night. It is wonderful to know that even in such a crowded and polluted place as Mexico City, Whip-poor-wills still spend a few months a year. I hope these amazing birds are luckier than the other diminishing species mentioned in the article, so they will keep waking me up at night every once in a while.

Alec Davis
Mexico City, Mexico

ANGLING FOR BIRDS?

First, I want to say that your magazine is a cut above all the other birding magazines, providing really meaningful articles. "Rocky Mountain High" by Mel White in the Winter 1999 issue brought back my own wonderful experiences at Rocky Mountain National Park, which I visited for the first time last summer. I had talked to so many birders who had visited the park and never seen an American Dipper—all I had to do was stand in the middle of a mountain stream with a fly rod in my hand and there came a dipper, working the stream as if I were invisible. While watching my fly and waiting patiently for a trout to bite, I heard some commotion in the streamside willows and saw a group of Wilson's and MacGillivray's warblers. An entire family of Red Crossbills just happened to be at a scenic pullover on the way up Trail Ridge Road. After looking over the ledge at a simply breathtaking view, I glanced down at the ground about 30 feet away, and there they were—a male, a female, and two juveniles. While marveling at the wonderful assortment of tiny plants that somehow survive the harsh tundra environment, I looked up and noticed a Prairie Falcon circling overhead.

All of this doesn't mean that I didn't see any birds while I was birding—birds were everywhere, in great abundance. The western birds were all new to me and such a treat, especially the Mountain Bluebirds and Summer Tanagers. But the biggest prizes came, just as Mel White described, when I was engaged in other activities and stumbled upon great birds.

Sara Blauman
Dallas, Texas

We welcome letters from readers. Write to The Editors, *Living Bird*, 159 Sapsucker Woods Road, Ithaca, New York 14850, or send e-mail to <livingbird@cornell.edu>.

BirdNews

Sapsucker Heaven

May 15, 1999, is a date that will live forever in the annals of the Lab's big-day history. On that memorable day, our mighty Sapsuckers smashed all of their previous World Series of Birding records, fighting it out toe-to-toe (and beak-to-beak) with the top teams in this contentious event. Did we win first place, ending the millennium with a bang as promised in the last issue of *Living Bird*? Before I tell you, let me mention a few of the day's highlights.

Friday, May 14, 1999, 11:59 P.M.—There they stand, side-by-side in the darkness of the Great Swamp . . . waiting eagerly with ears straining to detect and identify the slightest avian *click*, *chirp*, or *oonk-a-loonk* emanating from the black marsh in front of them. The final seconds before the start of the big day elapse: four, three, two, one, NOW! *Who cooks for you*—a faraway Barred Owl blares through the darkness. *Who-whoo*, an equally distant Great Horned Owl chimes in, instantly giving the Sapsuckers two owls they sometimes miss on big days. Several much-needed marsh birds—Sora, Virginia and King rails, Least Bittern, American Woodcock—soon check in, along with a Yellow-breasted Chat and a flyover Black-billed Cuckoo.

Later, at the first hint of dawn in northern New Jersey, a Vesper Sparrow sings from a grassy hilltop, joined quickly by an early-rising Brown Thrasher, a Grasshopper Sparrow, and a Savannah Sparrow. Cruising High Point State Park and Stokes State Forest with both of the van's sliding side doors locked in full open position, the Sapsuckers pick out bird song after bird song. At 9:00 A.M., they have already racked up 137 species.

Beaming with self-confidence, the Sapsuckers hit the New Jersey Turnpike and head for the bountiful south—only to be deadlocked by six lanes of snarled, bumper-to-bumper traffic near Six Flags amusement park. Imagine being stuck in limbo, with all movement suspended—except for the clock as the big day ticks quickly away.

But all is not lost. Though they wasted 40 minutes, the traffic starts to move again, the road opens up before them. Nothing can stop them now. Through Salem County they blast, picking up waterfowl as they go. A Bald Eagle soars overhead, saving them a 10-minute side trip to a staked out nest. In the southern forests a howling wind picks up. Undeterred, the Sapsuckers change their plan and rush to the coast.

Red Knot, American Oystercatcher, and Whimbrel fall next, followed by Tricolored and Little Blue herons. Crouching low in the beach dunes, bombarded with blowing sand, they pick off a distant Black Scoter and a Red-throated Loon, and still they push on—past the 200 mark, then past their all-time record of 205 species.

As the evening mosquitoes swarm, Seaside Sparrows sing along the road. Whip-poor-wills call around them, and a nighthawk *peents* in the distance. At Turkey Point, they listen for a rare Yellow Rail and hear the distinctive *tick-tick-tick* of the bird on cue at 9:14 P.M. But this is to be the Sapsuckers' last "tick" of the day. A cold wind silences the Black Rails that had called on several previous evenings. And none of the five "guaranteed" Chuck-will's-widow spots comes through.

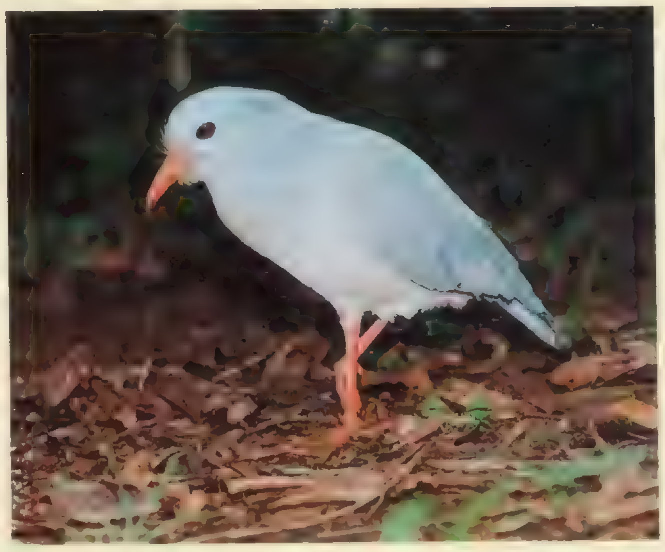
With a whopping score of 220 species at the end, the Sapsuckers wait breathlessly beside the World Series of Birding scoreboard as the numbers are tallied—210, 212, 213 . . . and finally (sigh!) 223.

Alas, the Sapsuckers were edged out, finishing a close second to the New Jersey-based Delaware Valley Ornithological Club, whose team members had become close scouting comrades during the previous week. The Sapsuckers' total was good enough, however, to keep the prestigious Stearns Trophy (for the highest total by an out-of-state team), which our team won last year. But more important, thanks to our members and friends, the team raised $120,000 in pledges to help support the Lab's vital efforts in bird conservation.

Of course, we bragged in last issue's "BirdNews" that we intended to snatch first place in the World Series of Birding before the end of the millennium. But, as several alert readers pointed out, the new millennium doesn't actually officially begin until January 1, 2001, so we have one more chance to make good on our boast. See you next year in New Jersey! ■

Island Rarity

This rare photograph of an adult Kagu (*Rhinochetos jubatus*) was taken on March 16, 1999. The Kagu is the sole member of its family (Rhinocetidae) in the order that contains cranes, rails, seriemas, and sunbitterns. Among the world's most unusual and endangered birds, the Kagu is restricted to the island of New Caledonia, in the southern Pacific Ocean, where it lives solitarily or in pairs in the interior of lowland tropical forest. This individual was photographed in Blue River Territorial Park, which protects the finest tracts of native forest remaining on New Caledonia.



SAMUEL C. JOHNSON

Flying Field

TROPICAL TEAMWORK

by Mel White

Birding by yourself is fine, but sometimes it's fun to share

"Uh, Mel? Where's the airstrip?" Holly asked, peering out the side window of our single-engine Cessna. As she spoke, the pilot conveniently sent the plane into a steep bank, giving us a better view of the terrain below.

The question was extremely apropos as far as I was concerned, since the altimeter was quickly approaching zero, and there was nothing in sight except the Pacific Ocean and a large number of densely growing trees. I truly wished I could have answered it.

As we continued to descend, a long, narrow clearing suddenly opened up parallel to the beach, a grassy lane flanked by forest. The pilot throttled the engine back, and in seconds we were on the ground. We were still taxiing when the rest of the group—10 birding friends on our annual getaway trip—landed in a second plane. It was a beautiful April morning, and we were all happy to be at Tiskita Lodge in southwestern Costa Rica, just a few miles from the Panama border.

Actually, we were happy to be on terra firma anywhere. Our group plus the pilots had fully packed the two six-passenger planes, and at the San José municipal airport there'd been considerable discussion about luggage, weight distribution, and such. Of course, it didn't help our attitude that we'd had to fly over the flank of the ominously named *Cerro de la Muerte* (the Mountain of Death) to get here, during which ascent we'd gotten whacked around pretty good by gusty winds.

But it's amazing how quickly you forget a bumpy ride when you look up and see a King Vulture soaring, when Violet-crowned Woodnymphs are feeding in the flowering trees, and Bright-rumped Attilas are calling from the woods. Some of us had been to Costa Rica before, but none of us had been to this far corner of the little country. So we all had the delicious anticipatory thrill of knowing that we might find a new bird literally any time we walked out the door. A male Baird's Trogon called from a tree right beside the lodge swimming pool one afternoon, and another time a Tiny Hawk, an accipiter barely the size of a thrush, perched on a branch just steps from the open-air dining room. As I stood on the porch of my cabin one day a Double-toothed Kite flew past within a few yards, carrying a lizard.

Several people saw Fiery-billed Araçaris on the hillside above the lodge, studying them from the comfort of lawn chairs—but I always seemed to be elsewhere when these toucans showed up. "Oh, you just missed them," Rob would say, or Karen, or LaDonna. It got to be a running joke, and I went along with it pretty well, I think, up until I threatened to throw Karen into the swimming pool if she said one more word about how gorgeous they were.

One day as we were out walking a trail, we spotted a White Hawk (a pretty darn gorgeous bird itself) carrying a dead araçari in its claws, the huge orange-and-black bill flopping limply as the hawk flew from tree to tree. Then a second White Hawk arrived, and we watched the two squabble over this colorful entrée for a while. It was one of the most picturesque incidents I've witnessed in the tropics, and I would have enjoyed it even more if I'd known that I'd finally see a live fiery-bill on our last morning here, just before we got back on the planes.

On more than one occasion a Yellow-headed Caracara flew over the lodge, but our excitement at seeing this raptor was tempered by the knowledge of what its presence meant: unknown in Costa Rica until 1973, this open-country bird has moved in from the south as the original forest cover has fallen. Costa Rica may boast of the high percentage of its land protected in parks and refuges, but natural vegetation outside these areas has been destroyed at a dismaying rate for pasture, crops, and towns—with the attendant decline in civilization-shunning birds such as Crested and Harpy eagles and Scarlet and Great Green macaws.

The area around the lodge turned out to be a mixture of small clearings, second growth, orchards, and, on the hills above, quite a bit of nice-looking forest. The avifauna was equally varied, from scrubland birds like Scrub Greenlet and Variable Seedeater to woodland species like Buff-throated Foliage-gleaner and Orange-billed Sparrow. We saw little birds—the funny-looking Golden-crowned Spadebill, a flycatcher with an oversized head and bill, and Bronzy Hermit, a hummingbird that in flight resembled a big red wasp—and big ones: a fabulous Spectacled Owl that we found along a forest trail and that posed long enough for us to set up the scope and let everyone look to their hearts' content. And let me tell you, the people who walked away afterward had some pretty contented hearts.

Once as we hiked through the good forest I wandered ahead of the group and walked right up on a Great Tinamou, a member of that odd, primitive order of shy, vaguely chickenlike birds that are heard far more often than they're seen. I knew that most of the others had never seen any kind of tinamou, so my heart was pounding as I headed down the trail to get them, trying to hurry as quietly as I could.

"Great Tinamou! Great Tinamou!" I hissed, looking, I'm sure, a little demented as I gestured wildly for them to follow me. I just knew that the bird would probably have silently melted away, as tinamous do, by the time we got back. But with a little searching we found it and, once again, were able to set up the scope and zoom in on its big dark eye staring back at us from its hiding place.

Some years ago, I wrote a little article about the quiet pleasure of birding by yourself: how no one ever crunches leaves when you're trying to hear a call note, how you can stand in a likely looking spot for half an hour if you want, with nobody to get impatient and press you to move on. Scenes like this one with the tinamou, though, often seem to me the nicest birding moments of all. Not only do you have friends around to share an exceptional sighting, but there's the fun of extending the pleasure by being able to look over as you're walking away and say, "Whoa, wasn't that *great?*"

DAVID L. ROSS, JR.

"One day we found a White-whiskered Puffbird sitting beside a narrow trail, deep in the thickest, darkest forest . . . and everybody got to see it."

While we tried hard to make sure that everybody saw everything, our teamwork sometimes worked and sometimes didn't. One day we found a White-whiskered Puffbird sitting silently beside a very narrow trail along the side of a steep ravine, deep in the thickest, darkest forest. A few people standing in the right spot had an excellent view, while others were blocked out. Sure enough, as we tried to shift positions and point out its location, it flew away. Luck was with us, though; it perched across the valley and stayed put while we set up the scope. It wasn't a great look, but everybody got to see it. Just a few hundreds yards beyond, the first few in line spotted a Collared Forest-Falcon (of the buffy, not white, form), whereupon it flapped off into the vegetation, never to be seen again.

From Tiskita we flew back to San José and took a bus over the Continental Divide to Selva Verde Lodge, a substantial ecotourism operation set on the Sarapiquí River near Puerto Viejo. Though only about 150 miles as the Black Vulture flies, this journey took us to a different, Caribbean-slope, set of birds: Olive-throated Parakeet instead of Orange-chinned; Blue-chested Hummingbird, not Charming; White-collared Manakin, not Orange-collared; Bay Wren, not Riverside; Passerini's Tanager, not Cherrie's.

We had some fine sightings right around the lodge, including the magnificent Agami Heron and, at dusk one day, a Great Potoo, a nightjar relative as big as a Great Horned Owl, making sallies out to catch insects from its perch high atop a tree along the river. We even got to watch a Sunbittern feeding its young in a nest right across the Sarapiquí from the lodge, and ooh and aah at its dazzlingly colorful wing pattern as it flew along the rocky riverbank. The excellent field guide to Costa Rica by Stiles and Skutch says this species' nest "has rarely been found" (as of 1989), so we felt especially lucky as we stood watching an adult pass a large beetle to one of the two juveniles.

Some of our most exciting birds came during a day at nearby La Selva Biological Station, operated by the Organization for Tropical Studies. I'd tried to visit here five years earlier but had been unable to get a permit, and it didn't take long to see what I'd missed. A Rufous Motmot appeared beside the trail at point-blank range, and we'd barely walked 15 more yards when a pair of Purple-throated Fruitcrows came down to eye level for a nice long look. Later, a Semiplumbeous Hawk was especially cooperative: "often permits close approach," the field guide says, and this one certainly did. It wasn't that we tried to get near, it's just that by the time we saw it we were practically standing right underneath. The hawk looked down on us with what seemed like complete indifference before eventually taking wing.

In late afternoon, three Great Tinamous and a Slaty-breasted Tinamou seemed to put the finishing flourish on the day, but La Selva had one last reward. Just as dusk was falling we spotted two Snowy Cotingas shining like beacons in trees near the road out, unnaturally white in this place of lush greenery and shadows. The day's only disappointment was that Karen had been hit hard by some sort of *turista*-type bug and had spent the day in bed back at the lodge. We told her what we'd seen—as gently as possible, of course—and cheered her up with that ever-popular birding consolation: Missing La Selva gave her an excuse to come back someday.

Our vacation over, heading to San José and the airport and homes and jobs, we all consoled ourselves with the annual question: Where are we going next year?

"Alaska," DeLynn said. "Southern California," I said. "The Rio Grande Valley," Rob said. "Florida," LaDonna said.

"Yeah, right," Kenny said. "You know we're probably gonna end up right back down here in another one of these hot, dirty, humid, so-sweaty-you-can-smell-yourself-all-the-time tropical places again. I mean, that's where the best birds are."

I know, I know. Isn't it *great?* ■

Mission Accomplished

BY TIM GALLAGHER

In a last-ditch effort to rescue the American Peregrine Falcon, Cornell professor Tom Cade launched the most ambitious endangered species recovery program ever attempted. Now, nearly three decades later, this amazing bird is slated to be removed from the Endangered Species List.

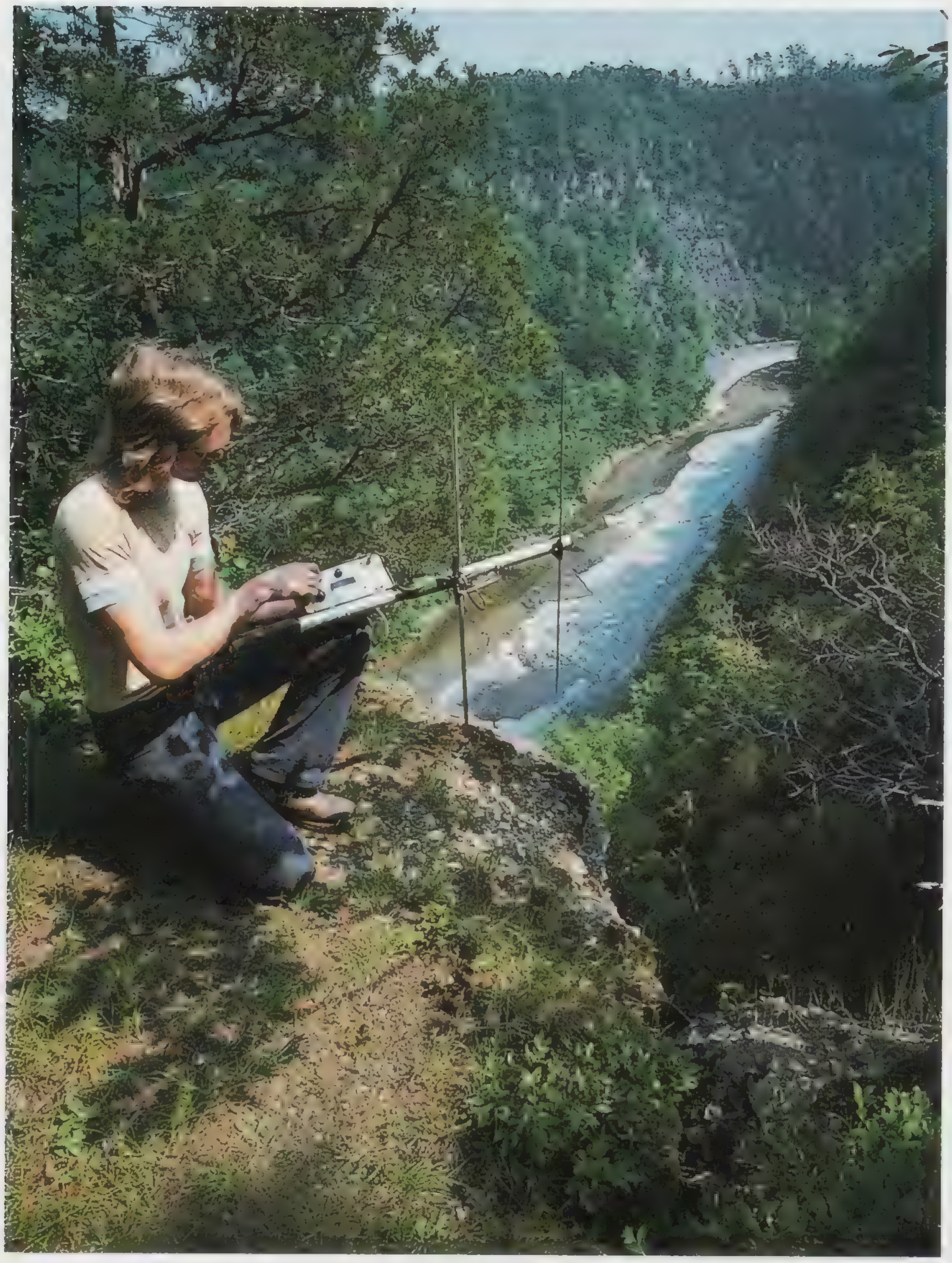
The future could not have looked much bleaker for the American Peregrine Falcon (*Falco peregrinus anatum*) in 1970. Ravaged by the effects of DDT and other environmental contaminants, the falcon's numbers had dwindled to the point that no nesting pairs had been found in the entire eastern United States for more than a decade. Lofty cliffs that had echoed with the cries of nesting peregrines for thousands of years before humans reached these shores stood quiet—like silent sentinels to the birds' impending extinction. Even in places where civilization had not yet visibly encroached on their habitat, in the remotest reaches of the Rocky Mountains, the birds were vanishing, and many biologists feared the trend was irreversible.

But looking back now, it's clear that 1970 was a crucial turning point for these critically endangered raptors—the year that Cornell professor Tom Cade initiated an aggressive, hands-on program to breed Peregrine Falcons

Like every other known Peregrine Falcon nest site in the eastern United States, this classic eyrie at Ithaca, New York's Taughannock Falls (photographed by Lab founder Arthur A. Allen in the 1930s) lay deserted after DDT devastated the falcon population in the 1950s.

BHL

Blank Page Digitally Inserted



Only seven miles from the Lab, Taughannock Falls was one of the first Peregrine Falcon reintroduction sites. Researchers built a shelf on the cliff and installed a long feeding pipe so food could be dropped to the ledge without the birds being able to see the humans who were feeding them. The falcons were tracked using radiotelemetry (above left). At top right, Tom Cade (left) confers with Jim Weaver, who ran the falcon breeding operation at Cornell.

in captivity and reintroduce them across the continent in areas where they were dwindling or already nonexistent. At that time, Cade, who was director of research at the Cornell Lab of Ornithology, formed an organization called The Peregrine Fund, dedicated to saving these rapidly vanishing birds. The group built a massive "Hawk Barn" at the edge of Sapsucker Woods Sanctuary to house the captive-breeding project. (Although the building remains, it no longer houses breeding falcons. The Cornell Raptor Program now uses the facility to breed accipiters—Goshawks, Cooper's Hawks, and Sharp-shinned Hawks—and to house injured eagles and other birds of prey in need of rehabilitation.)

DAVID G. ALLEN (4)

In its heyday, the Hawk Barn was a virtual Peregrine Falcon factory, where hundreds of young falcons were produced for release into the wild. What Cade and his army of falcon enthusiasts accomplished was incredible. They figured out how to breed large numbers of falcons in captivity and designed an effective reintroduction strategy. Eventually The Peregrine Fund and other collaborating groups released more than 6,000 Peregrine Falcons in 37 states and most Canadian provinces.

Perhaps the single factor that made the greatest difference in the Peregrine Falcon recovery was the vast number of people who were dedicated to the birds' well-being. From the start, Cade had no problem attracting qualified staff and volunteers. Falcon enthusiasts from across the continent came forward to help. Many—including some of the key players in the recovery program, such as Cade himself, Bill Burnham (current president of The Peregrine Fund), and Jim Weaver (who ran the falcon breeding operation at Cornell)—were avid falconers with a deep, personal commitment to the peregrine. (Many falconers also donated their own birds to be used as breeders.) Others came from all walks of life and all income levels—bird watchers, business leaders, scientists, educators, public officials, naturalists, students. What they had in common was a profound passion for these

JOHN HENDRICKSON

An adult Peregrine Falcon sits near its nest on the California coast (above). Although all of the known peregrine nests in Southern California had been deserted by the late 1960s, a few birds still maintained territories and laid eggs in Central and Northern California. Unfortunately, a high percentage of their eggs were thin-shelled and failed to produce young. Researchers started taking the eggs from these pairs and hatching them in special humidity-controlled incubators.

birds and an inability to imagine a world without the Peregrine Falcon. What they accomplished was one of the greatest successes in the field of endangered species management.

Now, nearly three decades after the Peregrine Falcon recovery effort was launched, their accomplishment seems simple, almost predictable—produce thousands of falcons and release them across the country; the birds are bound to bounce back. But it's always easy to be a Monday morning quarterback. In 1970, the whole enterprise was anything but sure. Although Peregrine Falcons had been trained and handled by falconers for centuries, they had never been truly domesticated. They always retained their aloofness—that air of nobility that ancient kings and aristocrats had so admired. And these birds had only been bred in captivity a handful of times before, most notably by ornithologist Heinz Meng, who had been a student of Lab founder Arthur Allen in the late 1940s and early 1950s.

Were these successful breedings a fluke? Many researchers thought so. They believed it would never be possible to breed massive numbers of peregrines in captivity. And even if you could, they reasoned, it would be impossible to release them successfully to the wild in numbers adequate to make a difference. The problem was that peregrines traditionally nested on lofty, rugged cliffs, performing grand courtship displays, rising and diving at scorching speeds across the open sky. No laboratory breeding facility in the world could duplicate these conditions. Would Peregrine Fund researchers be able to overcome these challenges? And, just as important, could they do it in time?

To understand the Peregrine Falcon's dilemma and its ultimate solution it's important to look back at the origins of the bird's decline—the introduction of DDT into the environment in the late 1940s. The first inklings of trouble for the peregrines came soon after, but it was not until the 1960s that scientists learned the full scope of the catastrophe. Researchers discovered that the effects of DDT are cumulative, building up in the fatty tissue of small birds that consume contaminated insects. Peregrine Falcons, which exist at the pinnacle of the food chain, preyed on these birds and absorbed staggering amounts of concentrated DDT.

THE PEREGRINE FUND (2)

Prairie Falcon chicks were sometimes placed in peregrine nests after the birds' thin-shelled eggs were taken. The pairs readily accepted these chicks and raised them until incubator-hatched peregrines (lower right) could be returned to wild nests. Above right, Phyllis Dague and Ron Walker replace a surrogate brood of Prairie Falcons with young peregrines. Manipulation of wild nests helped boost falcon numbers in areas that had a remnant population of Peregrine Falcons.

DDT inhibits the movement of calcium in a falcon's system, causing the shell gland to produce eggs with shells sometimes 20 percent or more thinner than normal. The weight of a falcon as it brooded these fragile eggs was often enough to break the shells. And even if the thin-shelled eggs did not crack, many embryos perished due to an improper moisture or gas exchange through the shell.

Proving that DDT was the culprit took a great deal of time and research. Cade had marked off an area along the Colville River in northern Alaska as a study site in the 1950s. He returned in the 1960s and began randomly sampling falcon eggs for pesticide contamination. Although the arctic peregrines on their breeding grounds were isolated from humans, their eggs contained high levels of DDT, apparently ingested during their long migrations to and from South America, where they winter. After comparing the pesticide levels in these eggs with the level in eggs taken in the lower 48 states, Cade predicted that the arctic peregrines would soon be in trouble.

His worst fears were realized three years later in 1969, when he found many non-nesting pairs and nests containing broken eggs or dead nestlings in his study area. The organs of the dead falcons had extremely high pesticide accumulations, and many of the eggs had significantly thinner shells than usual. Acting for a group of raptor biologists, Cade advised the Secretary of the Interior about the Peregrine Falcon's dangerous situation. As a result, the bird was placed on the federal Endangered Species List in 1970. Cade's research was also a major factor in the banning of DDT in 1972, which took a major effort by scientists, conservationists, and other concerned citizens.

When the captive-breeding program began in the early 1970s, Cade did not build massive flight cages for the peregrines to try to simulate natural conditions. Instead, he attempted to adapt the falcons to living in the breeding chambers constructed for them at Cornell. The birds were taken from wild nests at an early age—usually as down-covered chicks—and raised specifically to be breeders.

The researchers took many factors—including the falcons' diet and the temperature and length of daylight in their natural environment—into account. They also conducted experiments with artificial insemination, which proved extremely useful with individual falcons that would not reproduce naturally.

Eventually the work paid off. In 1973, The Peregrine Fund produced its first captive-bred falcons—20 young peregrines. Once they had passed that milestone, the researchers lost no time in attempting to develop new techniques to boost falcon egg production. They experimented with a method called "double clutching"—taking the first clutch of eggs from a

DOUG WECHSLER

After losing a number of young falcons to other predators, such as Great Horned Owls and Golden Eagles, The Peregrine Fund began releasing falcons in urban areas (above). The birds subsequently began nesting extensively on skyscrapers and other human-built structures. Today, at least 100 pairs of peregrines nest in urban or industrial areas in North America.

pair of falcons soon after they were laid. Egg collectors had long known that most birds would recycle and lay a second or even a third clutch of eggs if the first ones were destroyed or taken early in the breeding season. Peregrine Fund researchers found that this double-clutching technique worked well with peregrines, and it became a great boon to the falcon recovery program. It was especially valuable for rescuing some of the thin-shelled eggs laid by wild falcons. Many eggs that might have been lost through eggshell breakage or related problems were successfully hatched in specially humidified incubators.

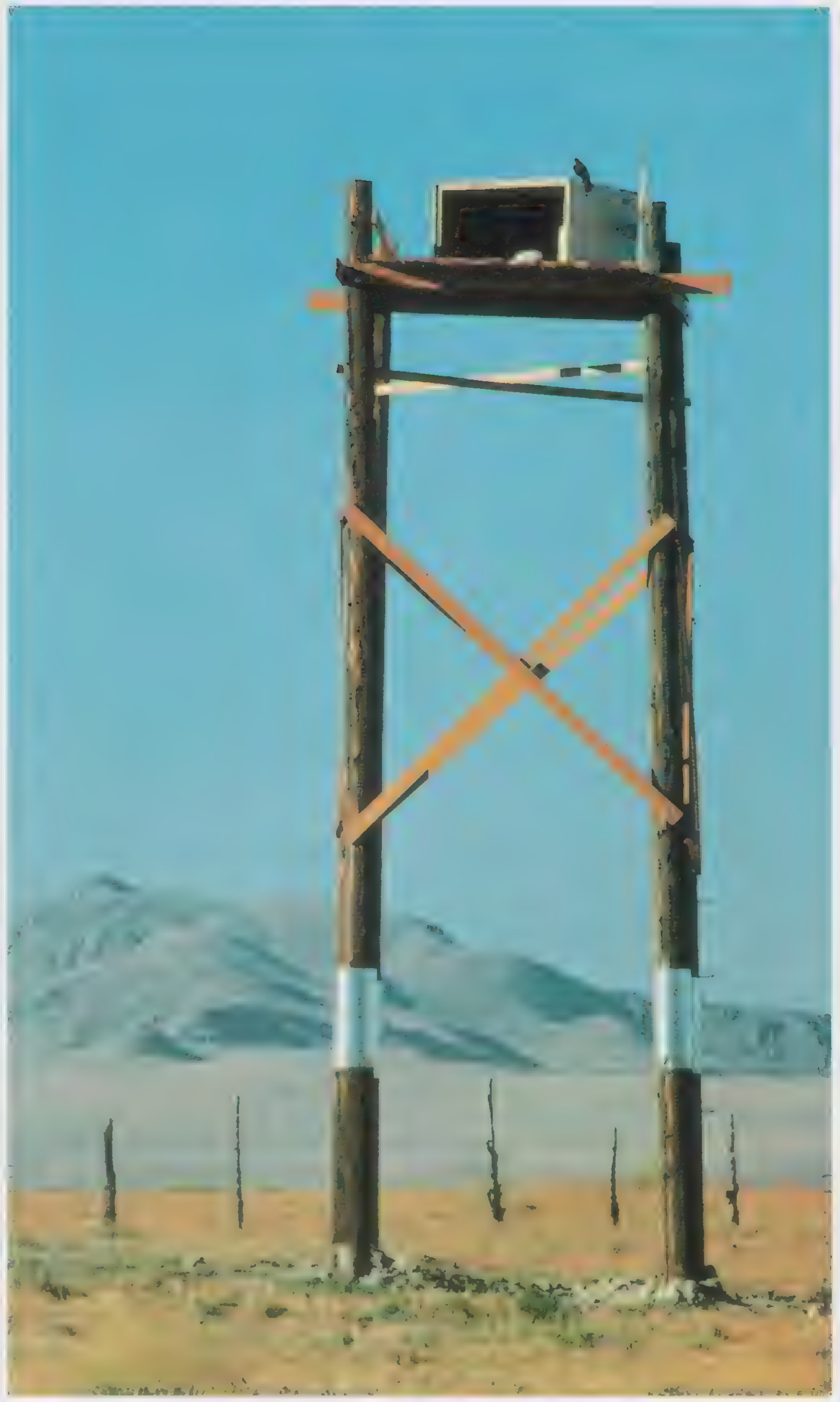
"By 1975, we had produced enough falcons at our Cornell facility to take the next step—releasing young peregrines into the wild," says Cade. To accomplish this, Peregrine Fund researchers placed young both in traditional nest sites on cliffs and in "hack towers"—platforms built high above the ground in suitable areas where no natural nest sites existed. Because the young birds had no parents to feed and care for them, field assistants—most of whom were volunteers or received a small stipend—stayed with the birds for several weeks, monitoring their progress and providing fresh meat for them to eat. They avoided letting the young falcons see them when they left their daily rations, so the birds would not associate humans with food. After they fledged, the falcons would continue to stay near the release site and accept food until they had learned to hunt for themselves.

This release technique worked well for the most part, although in some locations, with no parents to protect them, the young falcons were sometimes killed by other predators. In wooded areas, Great Horned Owls were the single largest cause of death among the newly released falcons, accounting for about 50 percent of all losses in the eastern United States. In the West, Golden Eagles also killed many young peregrines. Some hack-site attendants had the harrowing experience of watching helplessly as young, inexperienced falcons were snatched by these powerful raptors and carried off to be eaten.

This was a bitter disappointment to The Peregrine Fund's staff and volunteers, who had dreamed of quickly restoring the falcons to the great traditional eyrie cliffs of the East—such as the spectacular cliffs at Taughannock Falls here in Ithaca, where Arthur Allen took exquisite photographs of nesting falcons in the 1930s and 1940s. At Taughannock Falls, as in all too many other cliffside release sites in the East, the young peregrines quickly fell victim to the owls.

If you ask any of the staff and volunteers who took part in those early days of the release program if they ever had any doubts about the future success of the effort, they'll invariably say no. Failure was unacceptable and, indeed, unimaginable. They just went back to the drawing board and tried again. To counteract the losses they were facing at the wild nest sites, The Peregrine Fund began releasing young falcons in urban areas, where Golden Eagles and Great Horned Owls would not be a significant threat to the birds.

THE PEREGRINE FUND



The Peregrine Fund built numerous "hack towers" (above right), modeled after structures used for centuries by falconers, who believed that if young falcons had a chance to fly free (at "hack") for several weeks, it would speed their development as hunters. Falcons released by The Peregrine Fund were fed daily at these sites until they dispersed.

"We decided to try urban releases because the young falcons would be relatively free from predators, and they would have a large supply of food in the form of feral pigeons and starlings," says Cade. "But cities are a mixed blessing. The birds sometimes have problems. They occasionally fly into reflective windows or get into other kinds of trouble. But people do get to see them. It calls attention to the problems of wildlife. The fact that these birds are in cities has created a lot of goodwill for the falcons."

The researchers also hoped that if enough falcons nested in cities to fill up all the available territories, some birds would eventually disperse away from urban areas and begin reoccupying traditional cliff sites (and this does appear to be taking place now in a number of areas).

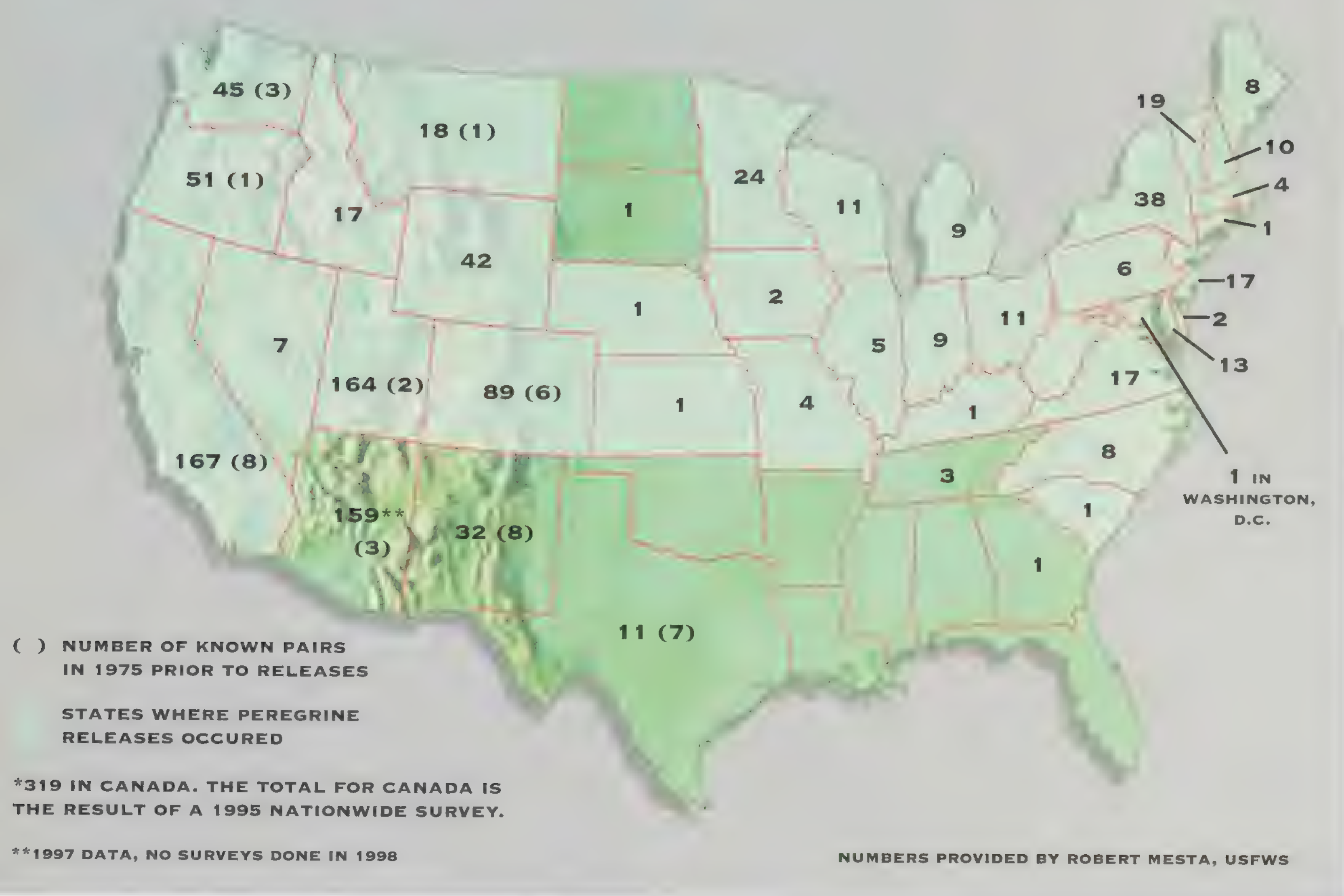
And it was actually not unheard of even prior to the urban releases for Peregrine Falcons to nest on human-built structures. For centuries the birds have nested on castles in Spain and other areas, and a number of records already existed in the scientific literature of peregrines nesting on bridges and skyscrapers in North America—such as the famous pair that successfully raised young for several years on the Sun Life building in Montreal during the 1950s.

The great milestone year for The Peregrine Fund was 1980. That spring saw the first natural reproduction of Peregrine Falcons east of the Mississippi River in more than 20 years. Three nests produced six young. A modest start, but it was a clear indication of the enormous potential of the program.

The upward momentum of the peregrine recovery has continued to the present, with

SUMMARY OF AMERICAN PEREGRINE FALCON PAIRS IN 1998*

1,650 PAIRS



( ) NUMBER OF KNOWN PAIRS IN 1975 PRIOR TO RELEASES

🟩 STATES WHERE PEREGRINE RELEASES OCCURED

*319 IN CANADA. THE TOTAL FOR CANADA IS THE RESULT OF A 1995 NATIONWIDE SURVEY.

**1997 DATA, NO SURVEYS DONE IN 1998

NUMBERS PROVIDED BY ROBERT MESTA, USFWS

MAP BY MIKE DIGIORGIO

The Peregrine Falcon has experienced a meteoric rise in numbers across North America since the mid-1970s, when The Peregrine Fund began its reintroduction program. According to the U.S. Fish and Wildlife Service, the known breeding population of the species on this continent, excluding Mexico, is now 1,650 pairs.

the known population of the American Peregrine Falcon increasing by 5 to 10 percent a year, even after the major release efforts stopped in the early 1990s. And no decline in the bird's numbers has been detected in any region of the continent since 1980. The species' numbers in North America have risen meteorically, going from a known breeding population across the continent (excluding Mexico) of 159 nesting pairs in 1975, when the releases began, to 1,650 nesting pairs in 1997, according to the U.S. Fish and Wildlife Service. And these are just the "known" pairs—many more undoubtedly exist. And now the Peregrine Falcon is slated to be removed from the federal Endangered Species List this summer.

It's amazing to think back on the early days of the Peregrine Falcon recovery program and realize how much was accomplished in such a short time. More than anything else, the program is a remarkable example of what humans can do to counteract the negative effects our presence can have on natural ecosystems. Of course, with DDT being banned in the 1970s, it's possible that the peregrines would eventually have come back on their own—although that is by no means certain. But it definitely would not have happened in our lifetimes or perhaps even in the lifetimes of our children.

Hundreds of Peregrine Falcons now nest across North America, from east to west and north to south, and we owe the presence of these birds to all of the dedicated people who took part in the recovery effort. A remarkable number of them changed the entire direction of their lives to help the peregrines. Some switched careers or took leaves from college just so they could take part. But I've never heard anyone say that they have any regrets.

As for The Peregrine Fund, the group closed its Cornell facility in the late 1980s as the falcon reintroduction program was nearing completion in the East, and it is now headquartered at its World Center for Birds of Prey in Boise, Idaho. Even though The Peregrine Fund's flagship (and namesake) species has recovered, the group has plenty of other vital projects. Threatened raptor species from throughout the world—the California Condor, Mauritius Kestrel, Orange-breasted Falcon, Harpy Eagle, and more—are already being bred in captivity and released by the group to ensure their continued existence, using techniques pioneered with the Peregrine Falcon. And Peregrine Fund researchers have even branched out beyond birds of prey to guide recovery efforts for the 'Alala, the 'Oma'o, and other critically endangered Hawaiian forest birds. Clearly, they have plenty of work to carry them into the new millennium. ■

A grand celebration of the Peregrine Falcon's recovery will take place this August 20–22 at the World Center for Birds of Prey in Boise, Idaho. Everyone involved in the restoration of the bird is invited to attend this special event, sponsored by The Peregrine Fund, the Santa Cruz Predatory Bird Research Group, and the Raptor Center at the University of Minnesota.

For more information, contact The Peregrine Fund, 566 West Flying Hawk Lane, Boise, Idaho 83207; phone: (208) 362-3716; FAX: (208) 362-2326; e-mail: <tpf@peregrinefund.org>.

Special Offer!

The Birds of North America

A limited number of charter subscriptions to *The Birds of North America* are still available to members of the Cornell Lab of Ornithology (see *Living Bird*, Spring 1998). While the offer lasts, Lab members can purchase the entire 18-volume set (all 720 species accounts) for the remarkably low price of $1,875, a savings of $375 off the current individual charter price.

Don't miss this special opportunity. For more information, contact Pat Warner, The Birds of North America, 1900 Benjamin Franklin Parkway, Philadelphia, PA 19103; (215) 567-1170; e-mail: warner@birdsofna.org; web site: http://www.birdsofna.org.

The Birds of North America, No. 10, 1992
DAVID F. PARMELEE
Snowy Owl
The Birds of North America
Life Histories for the 21st Century
Figure 1
Order STRIGIFORMES Family STRIGIDAE

Going Birding?

Be sure you have the books, optics, and birding gear that will make your trip a success. ***The Birder's Catalog*** is a goldmine of birding products and resources.

Call for a free Birder's Catalog today!

ABA Sales

Specializing in books, optics, and accessories for birders.

PO Box 6599, Colorado Springs, CO 80934
Phone: 800/533-2473
Website: www.americanbirding.org/adcornell.htm

Marvelous, Mystical, Tropical Trogons

BY PAUL A. JOHNSGARD

Without major conservation efforts on behalf of these colorful birds, many species of trogons and quetzals may soon vanish from the earth

Of all the groups of birds in the world, few fit our ideas of "tropical forest birds" as well as the trogons and quetzals. They are found almost entirely between the Tropics of Cancer and Capricorn, from northern Mexico to northern Argentina. Furthermore, nearly all of them depend on hollows in large trees for nest sites, except for a few species that excavate cavities in the paper-maché-like homes of tree-dwelling termites or arboreal wasp nests.

Beyond that, trogons and quetzals conform to our ideas of how exotic tropical birds should appear. Nearly all of the approximately 40 species are colored iridescent forest green to bluish violet above and brilliant red, orange, or yellow below—colors as intense as those of the brightest orioles or tanagers. Yet these brilliant hues so effectively hide the birds from the human eye amid their surrounding forest vegetation that they are like one of those picture puzzles designed to test a person's visual abilities, in which you must discern a familiar shape in a confusing maze of intersecting lines and colors. The birds often remain maddeningly motionless, occasionally uttering monotonous repeated notes or, if you are very lucky, briefly spreading or defiantly flicking their tails up and down, as if certain that no mere human could possibly see them.

Trogons and quetzals reach their greatest abundance and species diversity in the lowland and middle montane forests of Central America and northern

ILLUSTRATIONS BY JOHN SCHMITT

Schmitt 99

The beautiful Elegant Trogon (page 19) is the only species regularly found in the United States, where it is highly sought by birders. Although the Resplendent Quetzal (above) is the national symbol of Guatemala, the bird is seriously threatened there by poachers, live bird traders, and rampant deforestation.

South America, where 23 species live. They also occur in the comparable tropical forests of Africa (three species) and southeastern Asia and the East Indies (11 species). Finally, two species are limited to Cuba and Hispaniola. The countries having the greatest numbers of resident species are Colombia with 13, Ecuador with 12, and Panama with 11. To the north and south these numbers gradually diminish, and only the Elegant Trogon *(Trogon elegans)* is regularly seen in the United States. This species penetrates southeastern Arizona and the extreme southwestern area of New Mexico. There it has become one of the "most-wanted" species for the hordes of birders who visit the Chiricahua, Huachuca, Santa Rita, and Atacosa mountains of southeastern Arizona.

These remote desert mountains served as a safe retreat for the trogons well into the 1900s, or more than 50 years after their first sightings north of Mexico. But it wasn't until 1939 that Cornell Lab of Ornithology founder Arthur A. Allen, armed with a tape recorder, documented the first known nesting of the species in the United States. Today, nearly 25,000 people visit these mountains annually, many of them hoping to catch a glimpse of what ornithologist Richard Taylor called "the most elegant bird in North America."

Trogons and quetzals constitute an avian order that has no known close relationships with any other. Their strange toe arrangement—the first and second toe point backward, the third and fourth forward—superficially resembles that of woodpeckers, which also have two toes forward and two backward, but in the case of these and similarly clinging birds it is the first and fourth toes, rather than the first and second, that point behind. Actually, trogons don't often cling to vertical tree trunks or branches in the manner of woodpeckers, except when they are tearing away the rotted wood of dead trees to excavate nest cavities. Like many other cavity nesters, trogons may also simply claim and occupy existing tree cavities, especially those previously used and abandoned by woodpeckers. Because they can only gnaw extremely rotted wood, the cavities they occupy are usually unstable. It is not uncommon for the branch or trunk to collapse under its own weight during storms or over time, so few cavities can be used for multiple seasons.

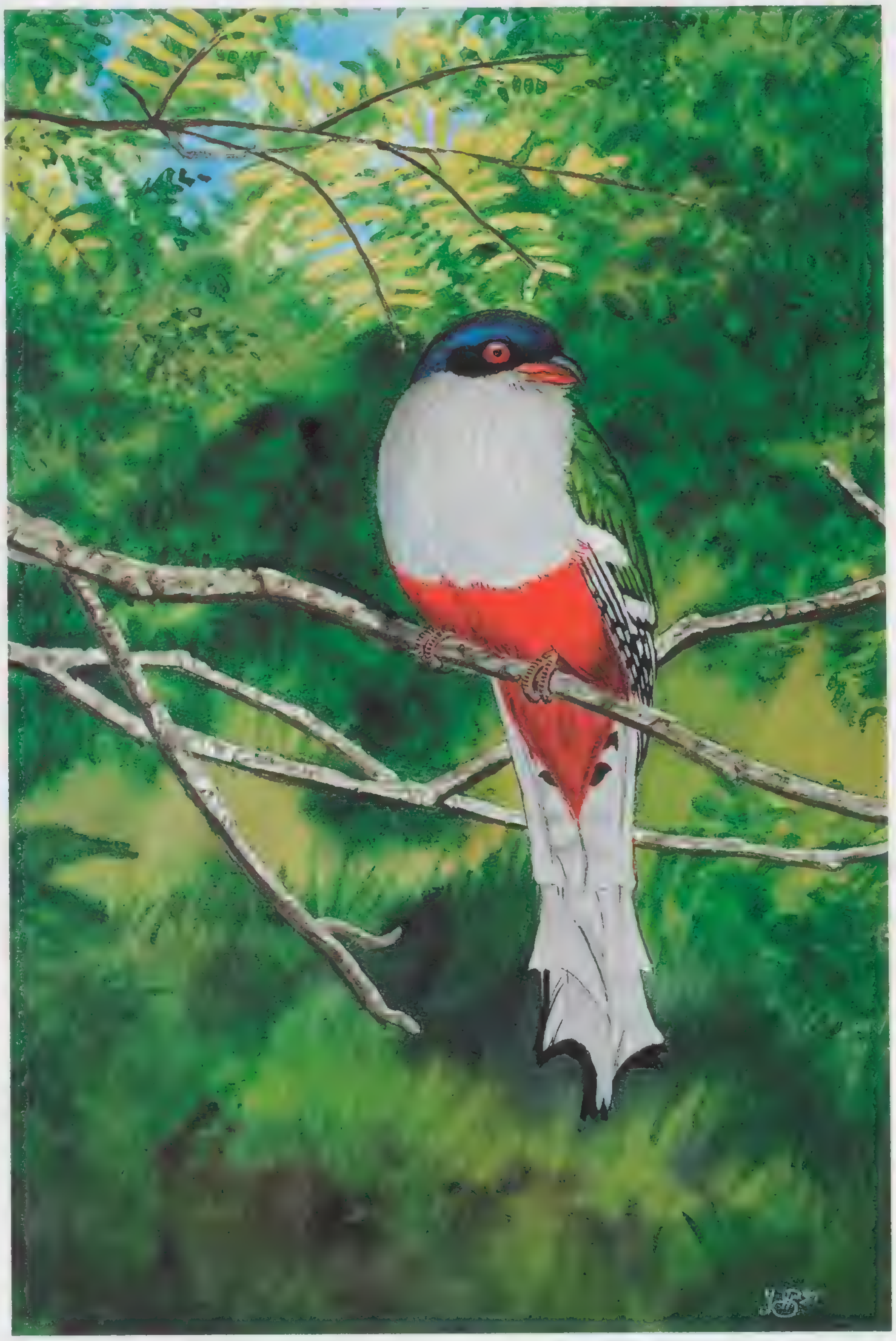
"Trogon," the generic name of most of the New World species, translates from the Greek as "gnawer," and many of the species have serrated or toothlike edges on their bills that seem adapted for chewing or holding prey. Such serrations occur in many of the typical trogons, which are largely insect eaters. They are also present in the generally larger quetzals *(Pharomachrus* ssp.*)*, which feed almost exclusively on the fruits of tropical trees, especially wild relatives of the oil-rich avocado. The term "quetzal" has its origin in Nahuatl, a Central American language, and perhaps refers to the beautiful iridescent train of elongated feathers that covers the adult male's true tail feathers. Or the word may have been derived from the loud two-syllable call that quetzals often utter when disturbed.

"Quetzal" has also found its way into the present-day languages of Mexico and Guatemala, for the now-mythic god Quetzalcoatl was derived from an actual historic Toltec hero, who eventually became transfigured into the Aztec's god of wind and air and a benevolent patron god of the arts and music. Feathers from the male quetzal's train were a symbol of power and status to the Aztecs; only high priests and similar important officials were allowed to own and wear them. In Guatemala, the quetzal myth has been perpetuated by the adoption of the Resplendent Quetzal *(Pharomachrus mocinno)* as the country's national bird symbol, as well as its basic unit of currency. Unfortunately this symbolic status has done nothing to benefit the species in Guatemala, where poaching of the Resplendent Quetzals for their skins and capturing them alive for the illegal aviculture trade—plus rampant deforestation of their cloud-forest habitat—have a disastrous effect on their population.

Besides the Resplendent Quetzal, four other similar species of quetzals occur in Latin America, with three of them geographically replacing the Resplendent Quetzal in mountain forests, and the other—the Pavonine Quetzal *(P. pavoninus)*—existing in the lowland forests of the upper Amazon Basin. Although none of these birds has ornamental feathers as long as the Respelendent Quetzal's, all of them are similar in size and have an intensely golden-green iridescence on their upperparts. Indeed, the intensity of their iridescence is second only to that of hummingbirds. Furthermore, hummingbirds lack the brilliant carotinoid pigments that splash over the underparts of trogons, producing colors that need not rely on direct sunlight to produce their wonderful riot of color.

Why, you might ask, have these glorious plumages evolved? Trogons are thought to be highly monogamous; the male not only participates equally in incubation but does his share in rearing the young. Thus, in contrast to such elaborately plumaged tropical forest bird groups as the hummingbirds and birds of paradise, sexual selection seems an unlikely candidate for the evolution of such riotous colors and patterns. Perhaps the green upperparts and yellow to red underparts are, like those of many of the similarly monogamous parrots, actually a form of camouflage, helping the birds to blend in with their dense forest surroundings—just as artist Abbot Thayer proposed early in this century, and for which he was roundly criticized.

It is interesting that the larger species, the quetzals, whose fruit-eating habits mean that they don't have to chase prey, have the most beautiful and elaborate plumages in the family. Is it possible that the "handicap principle" of natural selection might apply? This is a hypothesis that attempts to account for the evolution of extravagant and seemingly costly male plumages or soft-part elaborations in mostly non-monogamous bird species—such as the peacock's long, heavy, and conspicuous train, which must adversely affect its ability to fly and run. The idea is that males with enough vigor and genetic quality to be able to carry



The Cuban Trogon (Priotelus temnurus) *(above) is the only trogon found in Cuba. Like many other trogons worldwide, these birds are seriously threatened by the destruction of the forest habitat upon which they depend.*

the "handicap" of having particularly colorful or long feathers or other seemingly costly secondary sexual traits identify themselves as being the most desirable mating partners of discriminating females.

In any case, the beauty of quetzals and trogons has probably been a distinct handicap for them, at least in terms of surviving in the face of human exploitation. It is also their sad fate to be adapted to the tropical forests that are being destroyed most rapidly by the timber industry, especially in Asia and the lowlands of South America. None of these species has yet become extinct, but some—such as the Resplendent Quetzal—are now confined to a few protected forest reserves, most of which are not large enough to sustain viable breeding populations or to encompass their seasonal migrations to lower altitudes during the nonbreeding season.

Deforestation in Borneo threatens the Whitehead's Trogon (above), the country's only endemic species, as well as five other species found there. The birds need the dead and rotting trees found in old growth forests to use as nest sites.

Ecotourists visiting Central and South America often have trogons and quetzals near the top of their lists of birds they would most like to see, and the money brought into countries that are willing to set aside large tracts of land as preserves or sanctuaries, such as Costa Rica, has paid high economic dividends. But trogons tend to have large home ranges—the Elegant Trogons of Arizona, for example, usually have territories at least a half-mile in size. Furthermore, the impermanent nature of their usual cavity nesting sites causes them to shift nesting territories on a regular basis. Added to these problems is the fact that trogons are sensitive to human disturbance during breeding season. The repeated intrusion of birders, especially those using tape-recordings to locate breeding pairs, has created stress for nesting birds in some locations and may have even caused some nest failures.

But disturbance to trogons and quetzals caused by tourists and birders is a minor threat compared with the chainsaw. Cutting down old-growth forests containing dead and rotting trees that offer ideal nest sites is the greatest danger to trogons and indeed most tropical birds. Deforestation in Borneo, where six trogons occur and where one, the Whitehead's Trogon *(Harpactes whiteheadi)*, is endemic, and the Philippines, which also supports an endemic trogon, poses especially serious problems for the group. Generally, the Asian trogons have been studied far less than their New World counterparts. The nest sites of some Asian species remain undiscovered, to say nothing of the details of their breeding biology.

The Eared Trogon *(Euptilotis neoxenus)* of western Mexico is now classified by the International Union for the Conservation of Nature and Natural Resources as endangered, and the Ward's Trogon *(Harpactes wardi)* of the eastern Himalayan forests is considered "vulnerable." The Resplendent Quetzal of Central America is believed to be endangered in several individual countries and as "near-threatened" collectively. The small ranges and habitat losses of the Hispaniolan Trogon *(Priotelus roseigaster)* and the Baird's Trogon *(Trogon bairdii)* of Costa Rica and Panama have also placed them in a near-threatened situation.

It is depressing advice to suggest that the best way to see as many species of trogons and quetzals as possible is to begin quickly, before they are snuffed out like so many flickering candles. But unless major conservation efforts for these birds start soon, such would seem to be the case. ■

Paul A. Johnsgard is a Foundation Professor in the School of Biological Sciences at the University of Nebraska, Lincoln. Smithsonian Institution Press will publish his monograph on the trogons and quetzals of the world next year.

The only way

you have to see **all** the species of birds in the world

This project is almost inconceivably ambitious. Eric Salzman. *Birding*, Feb. 1999

HANDBOOK OF THE BIRDS OF THE WORLD

Publication:
July 1999.
Available in
North America:
August 1999.

Volume 5

Barn Owls *to* Hummingbirds

Great Pre-Publication Offer!

Volume 5 at US$ 145
postage included
(Normal price US$ 185)

Set of Volumes 1, 2, 3, 4 & 5 at US$ 725 (Normal price US$ 925). Sets of several volumes can be paid for in up to 15 monthly instalments. Please enquire.

Volume 5, with more than 1600 birds depicted in 75 plates, and close to 400 photographs, will contain more illustrations than any of the volumes published to date.

Also, such important groups of birds, as the Owls and the Hummingbirds, will be covered in detail and with all the species and distinctive subspecies illustrated for the first time.

BirdLife INTERNATIONAL

Lynx Edicions

You can also order, ask for information or request a free 4 page color brochure by:

E-mail: lynx@hbw.com
Fax: 00 34 93 302 14 75
Telephone: 00 34 93 301 07 77
Post: Lynx Edicions
c/o Mail Management Group Inc.
81 North Forest Ave.
Rockville Centre, NY 11570

Orders from North America are shipped from our warehouse in New York.

See many full reviews and several sample plates, photographs and texts of the first five volumes at

www.hbw.com

The simplest way to order.

THE THORNBIRDS

TEXT AND PHOTOGRAPHS BY JOHN CANCALOSI

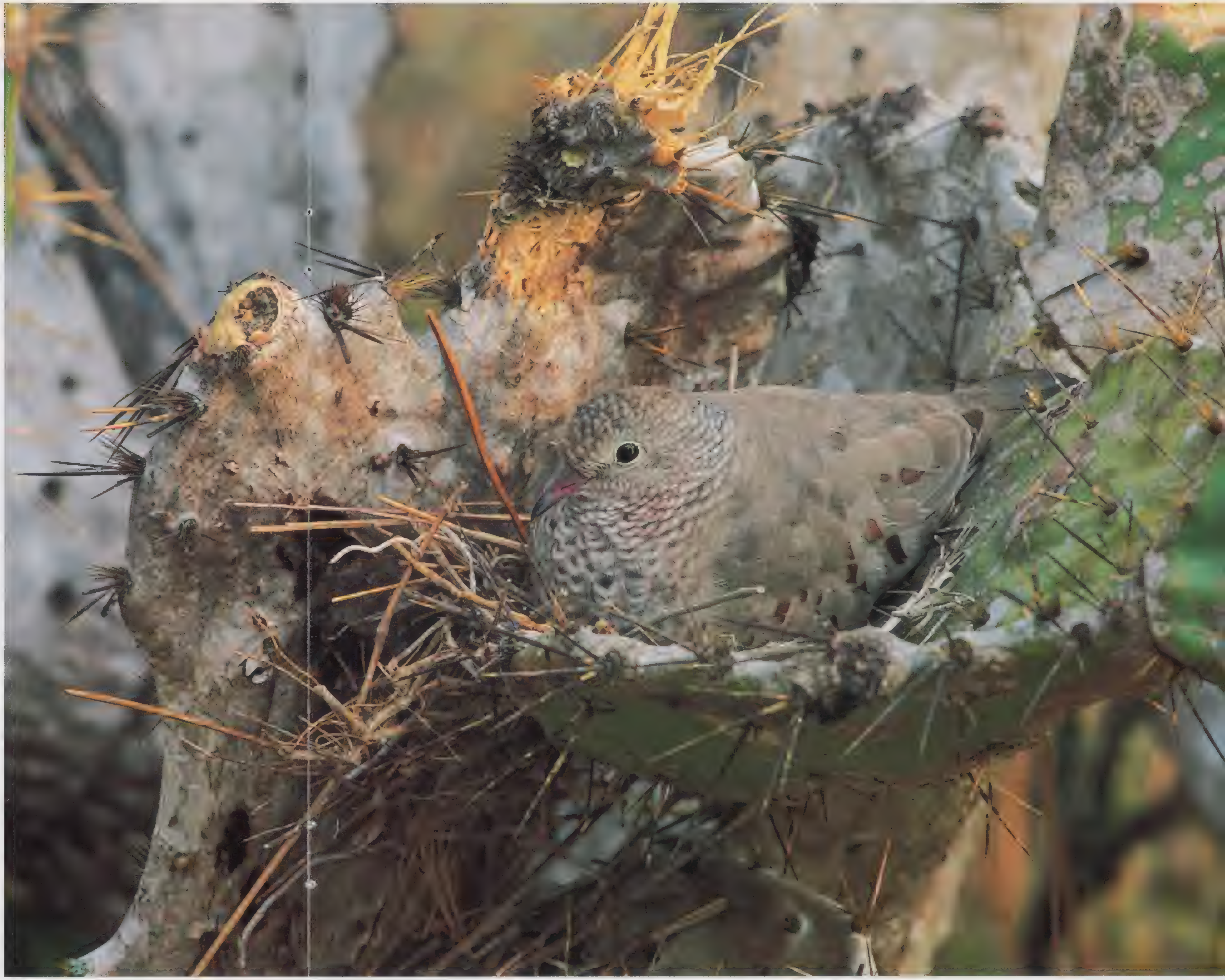
Coping with the prickly problems of life

For people who live in the wetter parts of the world, a trip to the arid lands of the Americas can seem like a journey to another planet. Vegetation is sparse and most of the plants present a forbidding arsenal of spines.

Cacti, of course, are the most charismatic of the spiny plants. As Edward Abbey wrote in *Cactus Country*: "The cacti, overcoming rigors that offer only a slender margin for life, are considered one of the great successes of the plant world."

My introduction to cactus country came in the Sonoran Desert of Arizona. Here I found a welcoming committee of a host of spiny plants. Perhaps most notable was the "teddy bear" cholla cactus, which, during my first months in the desert, all too frequently impaled various parts of my body. Not a very friendly environment, I thought. How can animals, and for that matter photographers, cope with the difficulties of living around cacti?

Gradually, I began to tune in to the desert. The thing that fascinated me most was the abundance of animal life. These creatures have obviously found ways to solve the thorny problems presented by their environment. To some animals, cacti and other spiny plants are merely obstacles to be avoided, but others use them to their advantage. Birds are especially adept at



Turning adversity into advantage, this Common Ground-Dove built its nest within a protective fortress of spikes in a prickly pear cactus. Photographer John Cancalosi took this intimate portrait in the Lower Rio Grande Valley of Texas.

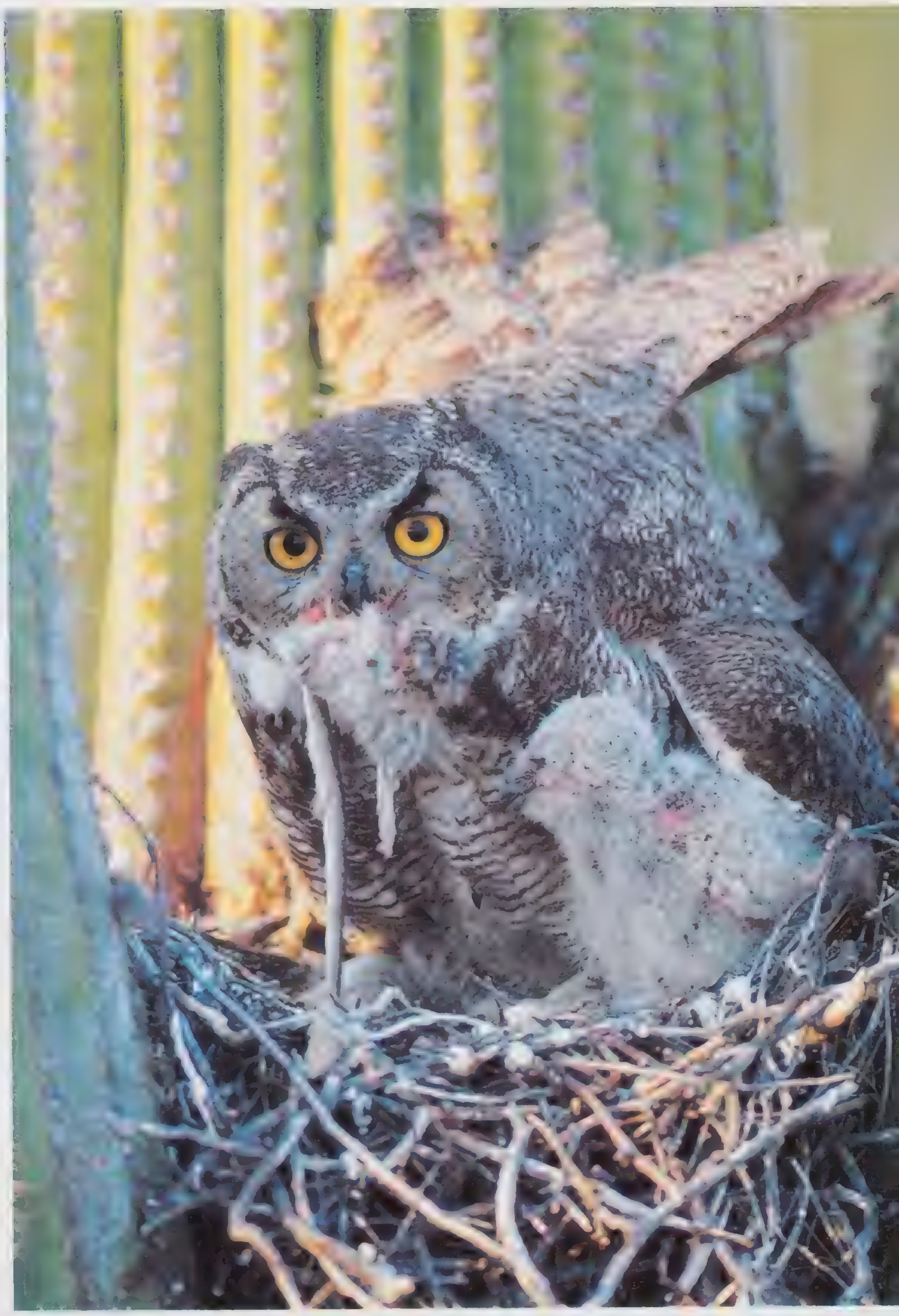
Blank Page Digitally Inserted

living with their thorny neighbors. Although some birds may merely use them as a convenient perch, others rely on them for food and nesting sites and probably couldn't survive without them. They have turned potential problems into opportunities.

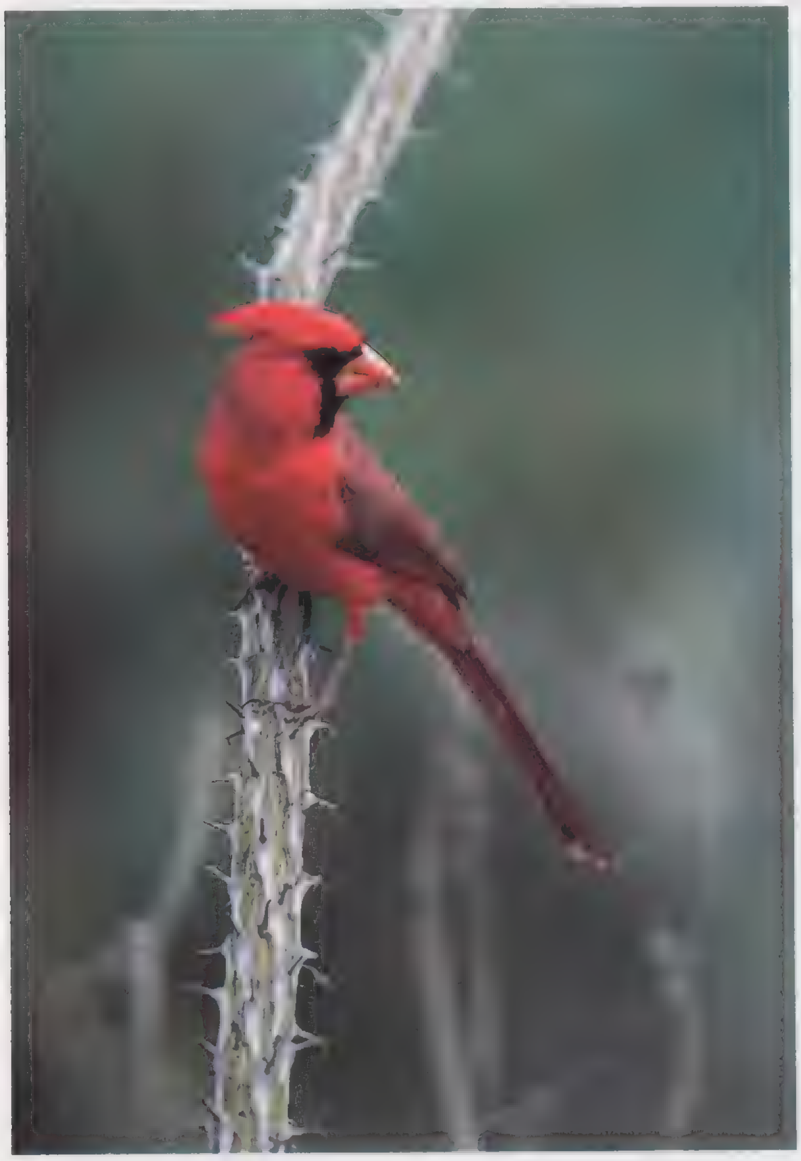
Taking my cue from these savvy survivors, I decided to focus my photographic efforts on birds living with cactus and other spiny plants. My travels were at that time limited to areas where cactus occurs most abundantly, in the arid lands of the American Southwest.

Like the birds I photographed in this forbidding environment, I tried to turn adversity into advantage as I worked on my "Thornbirds" project. Although my first experiences with cholla were a bit harrowing, I soon learned to avoid them. I also saw the photographic potential offered by birds in cactus and had some memorable times in pursuit of these images, all of which were taken in Arizona and Texas.

I did much of the photography from a convenient location—my property near Tucson, Arizona. I took some pictures from right inside my house, which is on the edge of the desert. I would keep several lenses mounted on tripods near windows, using curtains to hide my presence, and then go about my business until something interesting happened. Although this might not be the romantic, hardship-driven image you conjure up when you think of wildlife photography,



A Great Horned Owl brings food to its nest, high in a saguaro cactus in Arizona. Cancalosi photographed the bird from a blind on a tower he erected near the nest. One night, in a lightning storm, he had to climb down quickly from the metal tower, and he stumbled around in the dark for hours searching for his truck.



Cancalosi uses his house, near Tucson, Arizona, as a gigantic photographic blind, setting up tripods and cameras at strategic windows and hiding behind curtains. Whenever an interesting subject appears, such as this Gila Woodpecker feeding at a saguaro blossom (far left) or this Northern Cardinal perched on an ocotillo plant, he drops what he's doing and takes pictures.

Cancalosi's property in Arizona provided a wonderful array of native Sonoran Desert plantlife and birds for photographic subjects. Above, a House Finch perches on the spike-studded limb of an ocotillo plant. At right, a Pyrrhuloxia shares the top of a young saguaro cactus with a House Finch.

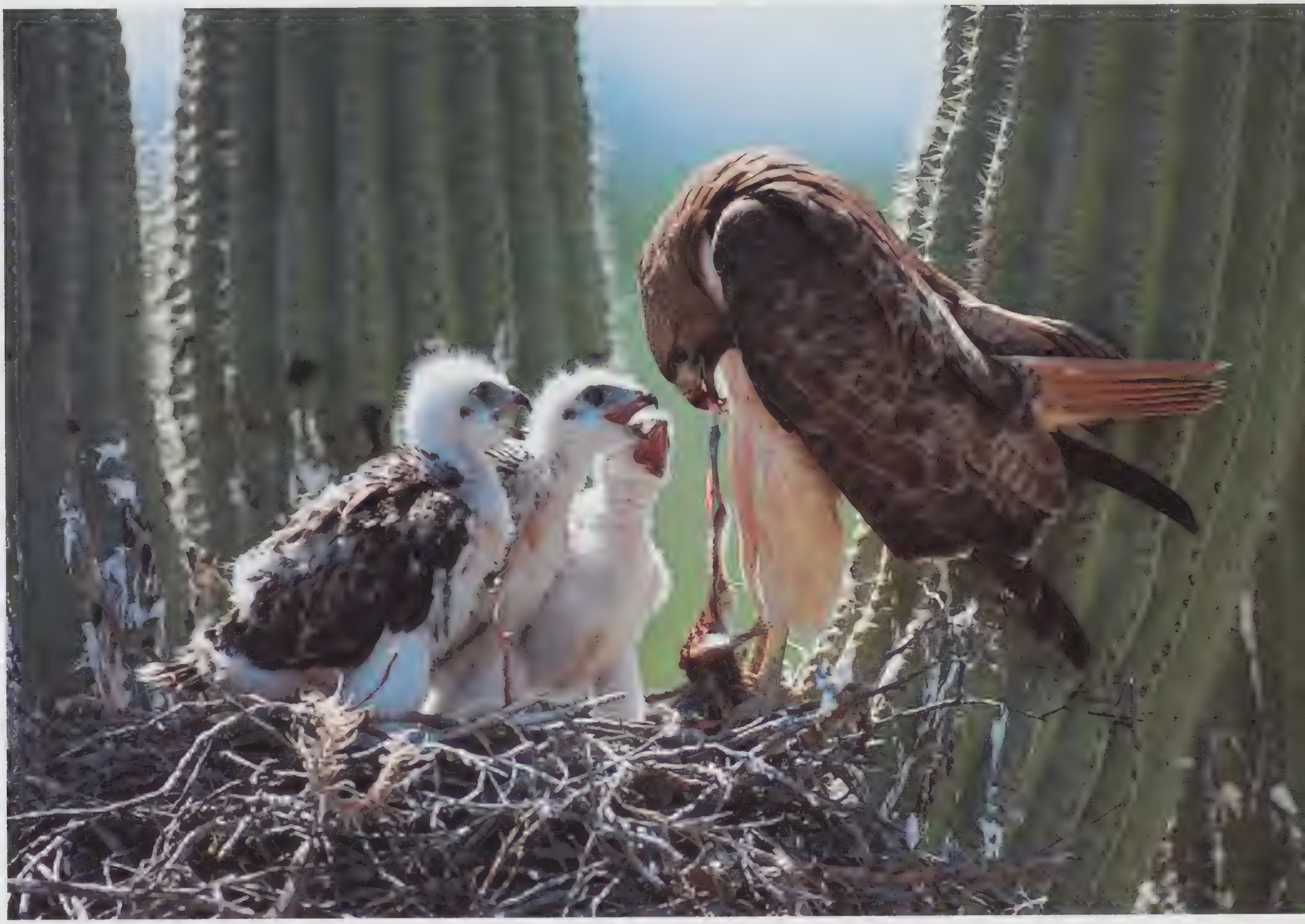
Although this nurturing portrait of a Mourning Dove feeding its young in the midst of a cholla cactus (far right) was also taken in Cancalosi's yard, it was not as painless to shoot as the other pictures. Months later, thousands of miles away, he was still pulling cactus needles from his legs.

it was an effective way to take pictures of fascinating desert wildlife.

Vicarious adventure seekers should take heart, however. It wasn't always so easy. Photographing Harris's Hawks, Red-tailed Hawks, and Great Horned Owls nesting in saguaro cactus required considerably more effort. First, I had to locate the nests in remote areas. Then I hauled scaffolding, bit by bit, and erected a tower with a blind on top near the nest. To avoid disturbing the birds, I would enter the blind at night and sleep 30 feet above the desert floor. My tender flesh delighted the local vampires—blood-sucking cone-noses! These inch-long insect atrocities would pierce me nightly with their proboscises, and I would awaken covered with a nice collection of swollen welts.

On another occasion, I was awakened in the middle of the night to the sound of an approaching thunderstorm. Hmmm . . . lightning, huge metal tower, I thought, as my steel-trap mind sprang into action. I was sure I could find my way back to my truck in the dark. I was wrong. After several hours of wandering aimlessly in the night, watching for rattlesnakes and cacti, I was finally rescued by the sun.

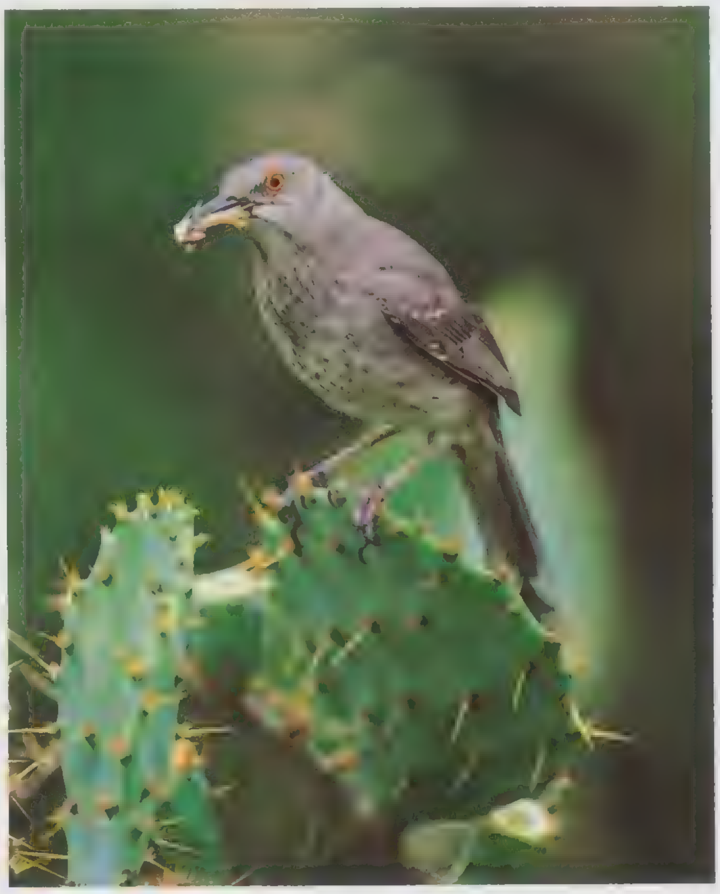
I often had to get close to my subjects, and I eventually started feeling a bit like a human pincushion. Months later, on a remote Scottish island thousands of miles from the nearest cactus, I was still pulling cactus spines from my legs.



A Red-tailed Hawk tears apart a rodent to feed its hungry brood of young (above). Cancalosi erected scaffolding with a blind on top to get eye level with this nest in a saguaro cactus. To avoid scaring the birds, he would climb up the tower in the middle of the night and sleep there, 30 feet above the desert floor, until there was enough light to take pictures.

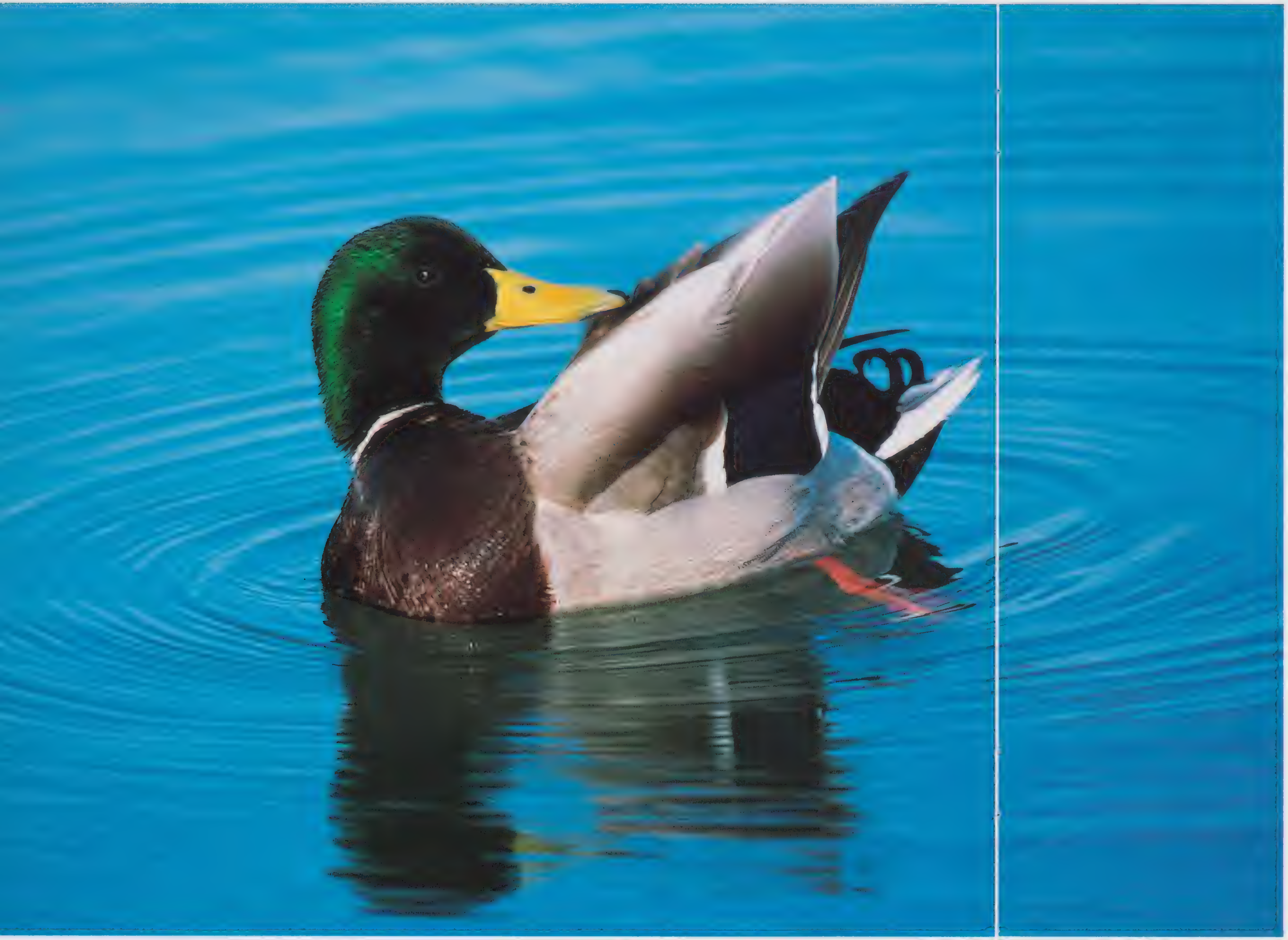
I feel we have a lot in common with the thornbirds. Much of our time is spent struggling with the environment and each other in order to reach our goals. Suddenly, by luck, skill, or pure persistence, things seem to work out: a hawk lands on a nest to feed its young or a Cactus Wren sings atop a cholla. These moments never last long, but they are worth the wait and the struggle. I am fortunate that many such experiences occurred to me in quest of these photographs. ■

John Cancalosi is a freelance photographer and writer who lives in the desert near Tucson, Arizona.



Perched on a dead cholla cactus in front of a young saguaro, a male Gambel's Quail provided a classic Southwestern composition (left). Cancalosi photographed this Curve-billed Thrasher in south Texas during the Valley Land Fund Wildlife Photo Contest—an annual competition that attracts photographers from around the world.

From WATERFOWL *to* WARBLERS



Since the 1920s, national wildlife refuges have served mostly as areas to produce, manage, conserve, and also hunt waterfowl, such as the Mallard above and the Redhead at right. But times are changing, and now refuges across the nation are broadening the scope of their management activities for the benefit of many nongame species, such as the Cerulean Warbler, above right.

ARTHUR MORRIS BIRDS AS ART

BY KRISTI G. STREIFFERT

National wildlife refuge managers across the nation are finally realizing that ducks are not the only game in town

When beginning birders visit a national wildlife refuge, it's not unusual for them to be bowled over by their first sighting of a shockingly cute Bufflehead, the sculptured beauty of a drake Canvasback, or the drama of a massive flock of Snow Geese rising high above them. And all they have to do is turn their heads a few inches to experience five or six more species of ducks. For birders, as well as the hunters who visit these wetlands every fall, national wildlife refuges have always been associated with waterfowl.

Perhaps that's one reason that, for 70 years, "duck" was just about the only language spoken by management personnel and visitors at many refuges. But this has changed in recent years. The National Wildlife Refuge System, which includes more than 500 refuges, went through a major transformation in the 1990s, moving from unabashed "duck worship" to ecosystem-based management. Songbirds and other nongame species will soon be seeing the benefits as new research and management efforts gain momentum.

CLIFF BEITTEL (2)

Administered by the U.S. Fish and Wildlife Service (USFWS),

BHL

Blank Page Digitally Inserted

TOM STREIFFERT (2)

the refuge system was initiated in 1903 by President Theodore Roosevelt. The concept of wildlife refuges arose in response to the need to protect egrets and herons from market hunters. At that time, several areas were also set aside for large mammals.

"But starting in the 1920s, duck and goose hunting began to be allowed in the refuges, and that influenced their management," says Jim Clark, editor of the *Refuge Reporter*, an independent journal published in support of the National Wildlife Refuge System.

The Upper Mississippi River National Wildlife and Fish Refuge, established in 1924, was the first refuge set aside specifically for waterfowl management and signaled the beginning of a new trend. Then, a 1958 amendment to the Duck Stamp Act authorized the "Waterfowl Production Area" program, which provided funding for developing and maintaining more waterfowl management areas. The North American Waterfowl Management Plan—established in 1986 with a joint agreement between Canada, the United States, and Mexico—also fueled the duck-oriented momentum.

But in the 1990s, a transformation began taking place within the U.S. Fish and Wildlife Service. Many people credit the vision of former USFWS director Molly Beattie (now deceased) as the primary force behind the movement to broaden the system's management beyond waterfowl, to include a full array of wildlife.

"What is happening now, after Mollie Beattie's leadership, is that the National Wildlife Refuge System is basing all of its management practices on an ecosystem approach," says Clark. One of the best outcomes of this evolution has been the initiation of numerous scientific studies conducted on refuges—studies that focus not on duck production alone, but on other species (such as nongame birds) and on ecosystem research.

Agassiz National Wildlife Refuge in Minnesota eagerly embraced this approach and now hosts several cooperatively funded studies. Although these studies—of Tree Swallows, Franklin's Gulls, American Bitterns, grebes, and moose—have created extra work and sometimes problems for the refuge staff, everyone is highly motivated to continue them.

"We are going on with what we think should be done," says refuge biologist Gary Huschle. "But finding the funding and managing the details sometimes become overwhelming," he says. "We just have to be bold enough, and maybe stupid enough, to start these projects and hope that the money comes." Headaches include seeking funding, issuing permits, coordinating airplanes and airboats, and making sure that enough vehicles are available to carry scientists to study sites—all while continuing to deal with the day-to-day management of the refuge.

Huschle thinks the organizational travails are well worth it. "We have such a large diversity of habitats and such a large area to work with that this refuge is perfect for conducting studies. Many other refuges share these features and are also great study sites." His refuge sits in the basin of ancient Lake Agassiz and provides a 61,500-acre sanctuary for more than 280 species of birds, two breeding packs of wolves, and 500 breeding pairs of Black-crowned Night-Herons.

Numbering more than 20,000 pairs, Franklin's Gulls are the refuge's most prominent breeder. You can hear the calls of these handsome orange-legged gulls for miles. These gulls were the subject of one of the refuge's most disconcerting new studies. Preliminary data, gathered by scientist Joanna Burger, revealed the presence of heavy metal (mercury) in their feathers. And Eared Grebe feathers from the same site contain 100 times the normal level of cadmium. Tom and Chris Custer of the National Biology Resource Division of the U.S. Geological Survey have begun a follow-up study to examine this contamination in depth. They are placing nest boxes throughout the area and sampling Tree Swallow eggs and nestlings to determine whether the contamination is acquired on site or elsewhere. Refuge managers are concerned that periodic drawdowns of the refuge ponds may be releasing the heavy metals.

Elsewhere on the refuge, scientists discovered that Agassiz also has a high concentration, not of a metal, but of a bird that has received very little scientific attention—the American Bittern.

"We don't even know where they go when they migrate," says Huschle. The bittern study, begun in 1994, has obtained data on more than 100 adults and nestlings and is gathering important information about nest-site characteristics, such as vegetation and water cover. Researchers track the daily movements of the birds with land vehicles, airboats, and sometimes airplanes. This study could yield vital data for future efforts to reverse the decline in numbers of the American Bittern.

In another study, begun in 1997, Bruce Eichhorse, a researcher from the University of North Dakota, is examining the comparative ecology of four species of grebes—Eared, Pied-billed, Red-necked, and Western—that breed on the refuge. Before he can begin his research in earnest, however, he is experimenting with capture techniques, monitoring egg incubation temperatures, and working on developing effective methods to attach radiotelemetry equipment to the grebes.

Agassiz is far from being the only national wildlife refuge to welcome scientific studies. More than 200 refuges in the system participate in annual Christmas Bird Counts, and nearly 90 take part in the Breeding Bird Survey. The intense attention given to Neotropical migratory bird conservation in recent years, thanks to the efforts of Partners in Flight (PIF) and other groups, has not gone unnoticed by refuge managers. In a recent survey, 216 refuges reported that they were using management techniques specifically designed to benefit songbirds and other nongame birds.

One of the most common breeding species at Agassiz National Wildlife Refuge is the Franklin's Gull, numbering some 20,000 pairs (at left and above). Recent studies at the refuge revealed mercury contamination in the feathers of these birds. Refuge managers are attempting to determine whether the birds were contaminated at the refuge—perhaps because of periodic drawdowns of the ponds—or elsewhere.

"We have to be careful about the research we permit, however," says Donna Howell, manager of Santa Ana National Wildlife Refuge in South Texas. "We had a study here in the past on cowbird dialects, and it was intensely interesting. But, because of funding constraints, we can't justify research like that."

Realizing their limits, the staff at Santa Ana has decided to focus only on research that advances the mission of the refuge. "Cowbird research is okay, as long as it targets a species of interest. We are continuing research on cowbird parasitism on Altamira Orioles, for example," says Howell.

Although individual species (such as the Altamira Oriole at Santa Ana) and endangered species (such as the Whooping Crane at Aransas National Wildlife Refuge and the Hawaiian monk seal at Hawaiian Islands National Wild-

Agassiz National Wildlife Refuge (above) has fully embraced the ecosystem approach to wildlife management, which benefits numerous species of plants, mammals, and birds, such as the Pied-billed Grebes below—not just ducks and geese. Little is currently known about the life history of the American Bittern (facing page), but the species is plentiful at Agassiz and is now being studied there.

life Refuge) receive special attention at some refuges, more emphasis is now being placed on entire ecosystems instead of single species. Howell says the trend at Santa Ana is toward more holistic research and management. The staff is currently circulating among scientists a list of more than 20 scientific studies they would welcome on the refuge. "This list targets areas in which we need data in order to manage the refuge more effectively," she says. Specifically, the list focuses on seasonal flooding of the Rio Grande River.

"Our habitat is dependent on seasonal flooding, and we are trying to find out the best way to simulate pre-dam days," says Howell. This need for data relates specifically to the ecosystem approach that has swept the refuge system, she says. "We need data that will tell us how to manage our wetlands for biodiversity."

The primary goal of the U. S. Fish and Wildlife Service, according to the current leadership, is to maintain "natural biological diversity through perpetuation of dynamic, healthy ecosystems." The wildlife beneficiaries of this goal are many, not the least of which are nongame birds. Some of the specific actions refuges are taking to meet those goals include efforts to develop nesting cover, which will benefit birds such as Northern Harriers and Western Meadowlarks; to manipulate wetlands and enhance food availability for shorebirds and wading birds; to restore riparian habitats; and to enhance forest habitat for passerines and raptors.

The move toward a more comprehensive approach to conservation will require partnerships, according to USFWS leaders. Citizen volunteers, Native American tribes, farmers, universities, non-government organizations, and other federal and state agencies will need to work together to increase our understanding of how the parts of ecosystems are interrelated and how long-term conservation of wildlife and wild lands can be achieved.

A prime example of people working together on behalf of nongame animals is Partners in Flight—an international consortium of government agencies, conservation organizations, scientists, and concerned individuals, dedicated to the preservation of migratory birds and the habitats on which they depend, throughout the Western Hemisphere. PIF's Midwest Regional Working Group on Neotropical Migratory Birds is working closely with refuges in its region, gathering data cooperatively and establishing conservation priorities and objectives that can be achieved on refuges through specific management activities.

The Midwest, with its prairie potholes and incredible duck production numbers, has been the epicenter of duck worship in wildlife management circles. But now, under the Partners in Flight program, refuges such as Tamarac National Wildlife Refuge in Minnesota, Seney National Wildlife Refuge in Michigan, Illinois National Wildlife and Fish Refuge, as well as others in Indiana, Iowa, Missouri, Ohio, and Wisconsin are working with state, private, tribal, and conservation groups to study and document Neotropical migratory birds. One indicator of how far the pendulum has swung: even the Upper Mississippi River National Wildlife and Fish Refuge—the first refuge purchased specifically for duck production—is now heavily involved in Neotropical bird research.

Ken Rosenberg, assistant director of the Lab of Ornithology's Conservation program and coordinator of PIF's Northeast Regional Working Group, concurs that a fundamental change is taking place in the focus of habitat and wildlife management at national wildlife refuges. "Although the purpose of these refuges has always been to protect and manage habitat, a primary shift in thinking in recent years is resulting in management for wildlife other than just waterfowl," says Rosenberg. He points out that Montezuma National Wildlife Refuge in Upstate New York drained the water from its vast main pool this year, creating a mudflat to benefit migratory shorebirds, did controlled burns and planted warm-season grasses for grassland sparrows, and is also actively managing a significant local population of Cerulean Warblers. "These activities sometimes conflict with traditional waterfowl management, and yet they are still occurring," he says.

And recently, USFWS director Jamie Rappaport Clark—who is turning out to be as forward thinking as her predecessor, Mollie Beattie—signed a memorandum endorsing the North American Bird Conservation Initiative, which includes Partners in Flight and is aimed at the conservation of "all birds, all habitats." This historic move could signal a real change in the allocation of funds and other resources within the U.S. Fish and Wildlife Service and other government agencies.

Refuge managers are quick to say, however, that songbirds will not completely supplant waterfowl as the darlings of the refuges. For one thing, that would defeat the purpose of the ecosystem-based approach, which requires an overall view of wildlife and habitat management. And secondly, as one refuge manager points out: "There is still a lot of grant money to be had for duck research from the hunting-oriented conservation groups."

"It's not that we are going to ignore ducks," he says. "It's just that we now realize ducks are not the only game in town." ■

Kristi G. Streiffert is a freelance writer based in Coulee Dam, Washington. Her work frequently appears in this magazine.

THE FUTURE OF BIRDING

LEICA educates young birders today for a brighter tomorrow through the LEICA/ABA Young Birder of the Year program.

Birders agree that preserving habitat is key to the future of birding. What better way to ensure that conservation efforts are continued than by getting young birders involved? LEICA and the American Birding Association (ABA) have teamed up to encourage the education and enrichment of youth interested in nature and birding by sponsoring the LEICA/ABA Young Birder of the Year program.

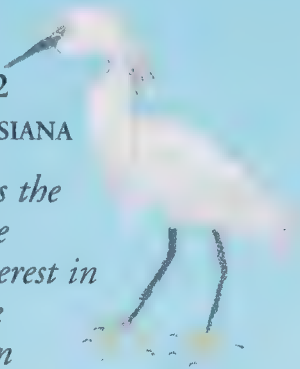
The LEICA/ABA Young Birder of the Year program encouraged more young people to get involved in birding with outstanding results! Birders ages 10-18 from the United States, Mexico, and Canada participated in the competition which included writing an essay at the beginning of the program, keeping a detailed field notebook of their birding activities all year long, and writing a final essay to describe what they learned. A panel of well-known birders judged the field notebooks and essays for improvement of observation skills, writing ability, and sketches. One winner from each age category was selected for the most outstanding and improved work, and will be awarded a prize package from LEICA including a pair of LEICA 8x32 BA Ultra binoculars, a sponsorship to a field ornithology camp, and $250 toward travel expenses. LEICA is happy to announce the LEICA/ABA Young Birders of the Year, and gives sincere thanks to all the young people who participated in the program.

Prothonotary Warbler by Jenny Brumfield.

LEICA/ABA Young Birders of the Year

JENNIFER WYGODA
AGE CATEGORY 10-12
LAKE CHARLES, LOUISIANA

At age 10, Jennifer is the youngest birder of the group. Jennifer's interest in birds can be seen from her field notebook which documents her birding activities in areas around her hometown, from her schoolyard and neighborhood to the marshes of Louisiana.



Snowy Egret by Jennifer Wygoda.

JENNY BRUMFIELD
AGE CATEGORY 13-15
AKRON, OHIO

A 15-year-old student and birder, Jenny has astonished the birding community with her artistic and writing ability, which is evident on each page of her field notebook.

Long-eared Owl by Jenny Brumfield.

PAUL JOHNSON
AGE CATEGORY 16-18
MACON, GEORGIA

Paul's scientific interest in birds has led him to research the history of birding, study observation techniques, and write research papers. Turning in five field notebooks for the LEICA/ABA Young Birder of the Year program, Paul shows impressive observation skills and a promising future in the field.

Northern Shoveler by Paul Johnson.

The LEICA/ABA Young Birder of the Year program provides a good opportunity to encourage growth and development of birding skills that can last a lifetime. To enroll a young person in your life in the 1999-2000 LEICA/ABA Young Birder of the Year program, please contact Lina DiGregorio at the American Birding Association by phone (719) 578-9703; e-mail edcon@aba.org, or contact the ABA website at www.americanbirding.org.

The Life of Birds

by Sir David Attenborough

We rarely review television programs in *Living Bird*, but Sir David Attenborough's new series, *The Life of Birds*, is such a monumental achievement—10 hours of detailed, beautifully photographed coverage, devoted entirely to birds—it certainly deserves to be covered here. I saw the first episode last year in England, where the series debuted in October, and I was impressed. My only disappointment was that I thought I'd have to wait until the program's American debut in July 1999 to see the remaining nine episodes. But, happily for me, I recently received videotapes of the entire series for review.

What struck me first about *The Life of Birds* is the remarkable photography—the best film footage of birds I've ever seen. As a photographer myself, I could only gaze in awe at the television screen and wonder how the program's film crew got some of the shots, especially the extreme close-ups of flying birds, showing the movement and function of each flight feather. And none of this was stock footage. Attenborough's crew (which included 48 motion-picture photographers) traveled the globe for three years and spent more than $12 million to produce the show.

ROB COUSINS/BBC

Attenborough up close with a Golden Eagle.

In a number of cases, Attenborough's crew filmed behavior that had never before been recorded on a motion-picture camera—such as the wild Kiwi feeding at night on a deserted beach in New Zealand. Using a special starlight camera, the photographers followed the odd-looking bird as it walked slowly along the beach, foraging in the sand with its long bill. The bird seemed oblivious to Attenborough, who crawled along beside it.

Anyone who has seen one of Attenborough's television programs, such as *Life on Earth* or *The Secret Life of Plants*, will recognize his M.O. He's in almost every scene—the awe-struck amateur, completely fascinated by the workings of nature. There you are, watching albatrosses take off from a remote island in the Pacific when the camera suddenly pans left to reveal Sir David sitting there, his tousled gray hair blowing wildly in the wind as he expounds on the wonders of flight with his melodious English accent. But he is not an unwelcome presence. His sense of wonder seems completely genuine and his enthusiasm is infectious.

In addition to the spectacular photography of living birds, the series has some remarkable computer-generated special effects. You'll see Attenborough bending over the fossil of a prehistoric Terror Bird, when suddenly the ground falls away to reveal an entire standing skeleton of the long-extinct bird, which then grows flesh, skin, and feathers and comes to life. You'll also see a flock of pterosaurs flying along an ancient sea and an Archaeopteryx gliding from a tree.

Although I realize that in these primeval scenes (and perhaps also in some of the modern-day sequences) Attenborough sometimes takes scientific license in his explanations of the physiology, natural history, and behavior of birds, to some extent this is to be expected. Attenborough is not a scientist; he's a great popularizer of nature, and that's important. In order for people to want to conserve wildlife and the habitat it depends on, they have to develop an appreciation of nature. And for that, David Attenborough is one of the best promoters we have.

The Life of Birds will air on Tuesday nights at 8:00 beginning on July 20, 1999, in most areas of the United States, but check your local television listings. The series will also be available in a five-videotape set from Twentieth Century Fox Home Entertainment for a suggested retail price of $89.98. An excellent companion book of the same title, written by Attenborough, is also currently on sale in bookstores nationwide. (Princeton, New Jersey: Princeton University Press, 1998; ISBN 0-691-01633-X).

—Tim Gallagher

Silent Thunder: In the Presence of Elephants

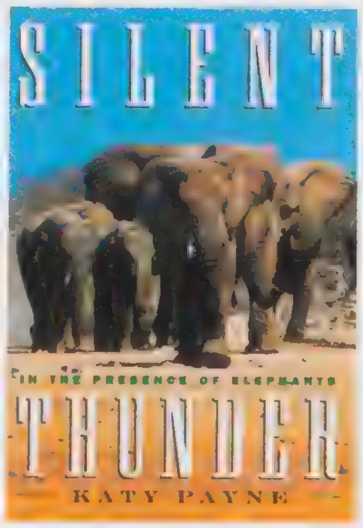
by Katy Payne

Author and elephant researcher Katy Payne has deep roots with the Cornell Lab of Ornithology. Not only is she a research associate, working with the Lab's Bioacoustics Research Program for more than a decade, she is also the granddaughter of famed bird artist Louis Agassiz Fuertes, whose work graces the hallways of the Lab and, of course, the spectacular Fuertes Room. Her recent book, *Silent Thunder*, chronicles her ground-breaking field work with African elephants, examining their long-distance communication, family structure, and other little studied areas of the animals' behavior.

During the first week of May in 1984, Katy Payne spent most of her waking and sleeping hours near the elephants in the Washington Park Zoo in Portland, Oregon. Curious about how these enormous mammals communicated with each other, Payne

30 Years
and billions of birds
We're proud to celebrate the anniversary of our A-6 feeder.
DROLL YANKEES®
1-800-352-9164
www.drollyankees.com

observed the elephants literally round the clock, recording their movements and gestures and any corresponding noises. Occasionally she would feel or sense a throbbing vibration in the air. But it wasn't until her journey home to Ithaca, New York, when she experienced the rumble of the airplane's engines, that she began to think about infrasound—sound so low it is inaudible to human ears. It reminded her of a time as a girl when she was singing in the choir at Cornell's Sage Chapel. The organist pulled out the great stop at the beginning of the second half of Bach's "Passion According to St. Matthew," and she felt the powerful shudder of the organ's lowest notes.



"Is that what I was feeling as I sat beside the elephant cage?" she wrote. "Sound too low for me to hear, yet so powerful it caused the air to throb? Were the elephants calling to each other in infrasound?"

This extraordinary discovery led Payne on a 13-year journey that took her to Kenya, Namibia, and Zimbabwe, where she lived among the elephants for months at a time—tracking, recording sounds, and noting movements. The more she learned about the elephants, the more she came to understand the intricate social structure that defined their world. And, not surprisingly, she came to understand—but not agree with—the human political and economic structure that circumscribed the elephants' world.

Her descriptions of the field work with the elephants is fabulous. We discover truths about elephants along with Payne. We learn how elephants use infrasound to communicate over several miles and coordinate the movements of their family groups. We watch as Payne discovers that elephants dig wells for water in dry creek beds. We learn about different elephant families and the varying personalities of their members. But most importantly, we learn, along with Payne, that individual elephants are always part of a larger community—they benefit from the learned and the genetic experiences of their families.

Payne interweaves her story about the elephants with her own story—her childhood on a farm outside Ithaca, New York, and her observations about the natural world and the world of her family. But you just know something bad is going to happen. In the late 1980s, Zimbabwe instituted elephant harvests, or culls, in part as an effort to encourage local peoples to see elephants as a resource rather than a nuisance. Profits from the sale of the culled ivory would be used locally. Elephants were also culled for "aesthetic" reasons—tourists don't like to see areas where the trees have been pushed down and trampled by elephants.

"Like people, elephants live empathetically," writes Payne. "The experiences of others became their own experiences, and there is no way to stop that. . . . No matter how the conflict between African elephants and human settlers was described, to control elephant population size by culling was to kill the spirit of the survivors." Zimbabwe modified its culling program from killing the oldest elephants to killing all the individuals grouped together at the moment of the shooting, which destroyed entire families.

"Since science is without morals, it offers itself as a sanctuary from the dangers of emotional commitment," she says. Katy Payne, the researcher, and Katy Payne of the philosophical musings run smack dab into each other in this book, and we are privy to her anguish as she learns of the destruction of the elephants she has come to know and understand. She tries to make sense of it. She thinks about the interrelatedness of animals and humans. She thinks about the effects of human intervention in the wilderness. And she wonders how populations of rural Africans and elephants will be able to survive in the same areas. For her, this goes to the core of the meaning of community. (New York: Simon & Schuster, 1998; ISBN 0-684-80108-6)

—Rachel J. Dickinson

THE AMERICAN BIRDING ASSOCIATION
PO Box 6599
Colorado Springs, CO 80934
phone: 800/850-2473 or fax: 719/578-1480
E-mail: member@aba.org
Web Site: www.americanbirding.org

Join the American Birding Association — the only North American association for field birders. Get involved with bird education, conservation projects and

- Stay in touch with the latest issues in birding through **Birding** magazine and **Winging It** newsletter.
- Find all of the books, optics, and accessories you need in **The Birder's Catalog**.
- Make contact with local birders as you travel using our **Birder's Resource Guide**.
- Join us at birding **conferences** and **conventions**.

"The best value in birding today!"

Looking for a great bird slide?

SHORT-BILLED DOWITCHER BY TIM GALLAGHER

The Cornell Lab of Ornithology has a vast collection of excellent bird slides, available individually or in specially priced sets. Use our slides to fill gaps in your own slide shows or purchase complete sets, some of which include written scripts or taped narrations and bird sounds. Photographs are also available for commercial use. Write today for our free catalog or visit our web site at http://birds.cornell.edu.

CORNELL LAB OF ORNITHOLOGY
159 Sapsucker Woods Road, Ithaca, New York 14850
Phone: (607) 254-BIRD e-mail: djw16@cornell.edu

"Exceptional"

". . . the premium zoom for the Swift NightHawk series provides exceptional performance. . . Added to other attractive features of the NightHawk ED, it makes an excellent reason to shop for a Swift."
STEPHEN INGRAHAM
OPTICAL EXPERT, BETTER VIEW DESIRED

SWIFT 849 NIGHTHAWK
80mm Spotting Scope
Also available with 45° viewing, model 849U NightHawk

SWIFT INSTRUMENTS, INC.
952 Dorchester Avenue, Boston, MA 02125
Ph. 617-436-2960 • WEB: swift-optics.com
Swift Instruments supports **INTERNATIONAL MIGRATORY BIRD DAY**
In Canada: Vision Canada LTD, Pickering, Ontario L1W 3SI

NO BINOCULARS REQUIRED

CD-ROM
WINDOWS 95/98
INTRODUCTION BY
PETE DUNNE
BIRD WATCHER
THE INTERACTIVE BIRDING GAME
"If you have a PC and are wild about birds, your gonna love this game"
BIRDERS
From the Publishers of the Best-Selling CD-ROM Wildlife Series
ALL
WIZARD Works
SWAROVSKI
Windows 95/98
CD-ROM

If you love birds and bird watching, this is the interactive birding game for you. Birders of all skill levels and areas of interest will find Bird Watcher informative and entertaining.

Interactive expeditions and games test your knowledge of over 140 birds.

Photo-realistic birding environments put you in your favorite birding hot spot.

Birding guide and tips help you become a better birder.

Take flight as one of America's favorite raptors and experience the challenge of raptor hunting.

Available at your local birding and computer software stores or order direct 1-800-229-2714

Published by

WIZARD Works®

www.wizardworks.com • gtstore.com

Bird Watcher is Endorsed by

SWAROVSKI

CORNELL LAB of ORNITHOLOGY

BIRDER'S WORLD

PENNINGTON

Wildlife Forever

DEALERS CALL 1-800-426-3089

©1999 Pondview Productions

In the Field

THE POWER OF PARTNERSHIP

by Jack Connor

For most bird species, it takes two parents to raise young successfully

Let's admit it: we prefer monogamy. We prefer it in our parents and grandparents, our friends and neighbors, our kids and their significant others ("What ever happened to that nice girl you took to the junior prom?"), and of course, we insist upon it in our own lovers ("Where have you *been* all night?").

For most of us, monogamy beats polygamy when it comes to birds, too. Male hummingbirds, blackbirds, grackles, grouse, manakins, birds-of-paradise, and others who practice promiscuity and polygyny (single males mating with multiple females) seem to most people to be cheating on their partners. Like human "deadbeat dads," male birds who leave all the parenting to the females seem to be exploiting the relationship, taking unfair advantage of an imbalanced system. Even female phalaropes, who earn mention in all ornithology textbooks because they are among the few birds anywhere that practice polyandry (single females mating with multiple males), seem like cruel manipulators, exploiting their partners' greater devotion to the eggs and young. Those poor, dumb phalarope males get stuck with all the work—it just doesn't seem fair.

At the opposite end of the spectrum are the world's most monogamous species: swans, geese, albatrosses, storks, eagles, parrots, ravens, and others that are said to "mate for life." Although banding records and DNA sampling have demonstrated that their monogamy is not the pure fidelity of fables and fairy tales (some individuals copulate with other partners; others divorce or desert their partners), these birds still earn our admiration and respect—by sharing responsibilities, raising their young in partnership, and, very frequently, cooperating with one another, year after year.

Although it may be anthropocentric to say it, for many people, much of the pleasure of watching breeding behavior involves studying two parents working together: mother and father chickadee helping each other build their nest, mother and father Osprey taking turns incubating their eggs, mother and father robin each carrying worms home to their begging offspring. Even when DNA studies reveal that some of these birds cheat on their partners from time to time, we want them to be responsible and to share the burdens. To most of us human observers, the biparental system seems the way a family *should* be raised.

Thinking of the two-parent family as a responsibility, however, can lead us to underestimate the power of the partnership. Consider, for example, two species that breed in two of the harshest habitats on the planet: the Emperor Penguin, which nests during the 24-hour nights and minus–70-degree temperatures of the Antarctic winter, and the Gray Gull, which nests in one of the world's driest and most barren places, the Atacama Desert in northern Chile, where rain falls only every century or so.

Both species practice biparental monogamy: each member of every mated pair incubates while its partner feeds in the open water many miles from the nest site, and each partner takes its turn caring for the young after they hatch. Gray Gull mates switch places at the nest every 24 hours, flying 40 or 50 miles from the desert to the ocean to feed and gather food, and then flying back home again. Unable to fly, Emperor Penguins must walk from nest site to foraging area and back again, and so they switch places only after many weeks of separation. But, as with the Gray Gull and most biparental species, male and female penguins share the burdens more or less equally. In fact, it's the emperor males who incubate the eggs through the coldest months of the winter.

One way to understand these behaviors is to note that the two-parent system seems imposed upon these birds by the hostility of their homelands. Any penguin or gull who chose to live life as a "deadbeat dad," copulating with his partners and then deserting each of them, would be punished by genetic termination, Mother Nature's toughest penalty. The young he fathered would not survive (unless some cuckolded male was fooled into caring for them). A female Gray Gull left alone in the desert to incubate her eggs without relief would eventually have to abandon the nest to save herself from thirst and starvation—and the eggs fathered by the deadbeat would quickly addle in the desert sun. In Antarctica an egg left without an adult to protect it would freeze solid in minutes.

So, yes, these habitats lock the gull and the penguin into a biparental mating system. Another way to understand this arrangement, however, is to see the power in the partnership: *perhaps the two-parent system is what enables these species to occupy those habitats in the first place.* Antarctica and the Atacama are such harsh, demanding places that birds can succeed only *because* they are working together. Their commitment to each other is not for duty's sake, and these birds are no more intrinsically virtuous than other animals; instead, their monogamy is a resource and a genetically determined skill that enables them to live and breed where other animals cannot.

We should remember the cause and effect sequence also. The Gray Gull did not take up monogamy after wandering into the Atacama Desert, nor did the Emperor Penguin discover biparental responsibility as it swam across the Antarctic Circle for the first time. Neither bird could have colonized either place if it hadn't developed the two-partner system before it arrived there. First came parental partnership, then came colonization. A promiscuous or polygamous species would have failed, and you will find few such birds nesting in any of the world's harshest places.

The relatively few species (less than 10 percent of all the world's birds) in which partners seldom or never work together are generally restricted to areas that are especially rich in cover and in food. Dense shrubs, thickets, or grasses must hide the nest so the incubator (the female in virtually all cases) can leave to feed, and feeding must come easy, so she can return quickly. North America's polygamous birds are primarily wetland, salt-marsh, or grassland species: Red-winged and Yellow-headed blackbirds, Boat-tailed and Great-tailed grackles, Sedge and Marsh wrens, Bobolinks, Dickcissels, sharp-tailed sparrows. All of these birds nest in protective cover and feed on insects during the breeding season.

Perhaps birds have conquered the rest of the world's habitats only because in most species the two sexes share in the parental tasks.

The necessity and power of this system is most obvious among species that raise their young in nest sites that require active defense. Ledges and platforms, for example, used by eagles, Ospreys, Peregrine Falcons, and other raptors must be defended throughout the breeding season, and, in virtually all cases, paired birds have much more success than unpaired birds. In fact, in most of these species a parent who loses its partner soon loses its nest site, eggs, or young, unless it can find a new mate. Cavities also require defense, so in woodpeckers and other hole-nesting species, parents who lose their partners frequently lose their brood. The competing needs of the parent to both guard the site from predators and to search for food often mean death to the young.

Emperor Penguin parents share equally the burden of raising young —a necessary formula for breeding success in Antarctica.

KONRAD WOHTE/MINDEN PICTURES

Similarly, colonial nesters—gannets, alcids, herons, gulls, terns, skimmers, Cliff Swallows, and others—can live in colonies only because they practice the two-parent system. Each nest site in the colony must be defended against the other members of the colony, who will steal the nest or materials (gannets, alcids, and herons), eat neighbors' eggs and young (gulls), or parasitize unguarded nests by dumping their own eggs inside (Cliff Swallows).

Even in such an "ordinary" species as the Killdeer, a ground nester, we can see the necessity of partnership. This example is on my mind because a couple of track team members at the college where I teach writing called me the other day, worried about a pair of Killdeers nesting in the middle of the track infield. "Why would they nest right out there in such a wide-open spot?" one of them asked me. For once in my life, I had a quick answer. "Because they can," I said.

Just as the Gray Gull and Emperor Penguin have colonized their demanding and dangerous breeding lands, the Killdeer has successfully colonized track infields, golf courses, parking lots, and farm fields—places so demanding and dangerous that few birds or other vertebrates of any kind can live in them. The Killdeers' camouflaged eggs have helped them in this effort, as has their "broken-wing" act, but the two-parent partnership is what makes the whole thing possible.

One student and I walked out to the track. Through my scope, we could see the incubating bird hunkered down on the eggs from 50 yards away, but as soon as we walked closer, the mate flew down in front of us, wiggling and calling, giving us "the broken-wing," leading us away from its partner.

"What should we do about these birds?" the student asked me eventually.

"Nothing," I said. "Let's just leave them alone right there. They're exactly where they should be, doing exactly what they should be doing." ■

BINOCULARS AND SPOTTING SCOPES

Optic Outfitters for Birders

Ask about our new phase-corrected Ranger binoculars!

Authorized U.S. Dealer for:
Leica, Zeiss, Swarovski, Swift, Nikon, Celestron, Bausch & Lomb, Kowa, Questar, Tele Vue, Pentax, Canon, Meade, Steiner, Leupold, Bushnell, Burris, Fujinon, Eagle Optics, Bogen, Velbon, Brunton, Mirador

Get the best information, advice *and* value from Birders who know: Birds, Birders, Birding and Birding Equipment. We've built a nation-wide reputation on offering birders the best in selection, service and prices on quality optic products. Let our courteous and knowledgeable sales staff gladly assist you in selecting from our complete and extensive inventory.

Call and ask for your FREE Comprehensive Optic Buying Guide & Discount Price List on optics from all major manufacturers

Eagle Optics ☎ *(800) 289-1132*

2120 W. Greenview Dr. #4 Middleton, WI 53562
Toll Free Order & Technical Assistance: (800) 289-1132
Fax: (608) 836-4416
Internet: www.eagleoptics.com
Email: earnest1@eagleoptics.com

The Sapsucker Woods Society

GREAT EGRETS BY CLIFF BEITTEL

You can turn a simple plan for your future into an investment for the birds. A planned gift in the form of a bequest or life income agreement is an ideal way to plan for your future, to retain real benefits for yourself, and to enhance the Lab of Ornithology's efforts in bird research and conservation. Lab friends who take advantage of this special investment opportunity will become charter members of the exclusive Sapsucker Woods Society.

For more details, contact Scott Sutcliffe, associate director, Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Phone: (607) 254-2424; e-mail: sas10@cornell.edu.

Cornell Lab of Ornithology
Visit our web site at http://birds.cornell.edu

Before the next flight, upgrade to first class.

If birding has become a lifetime pursuit, consider binoculars worthy of your commitment. LEICA's unmatched combination of legendary optics, ergonomics, and field reliability elevate you to the pinnacle of performance. With light gathering abilities that extend your birding day. LEICA, field mark of the serious birder. Call toll-free for the dealer nearest you.

LEICA
The Optical Advantage

1-800-222-0118
Leica Camera Inc., 156 Ludlow Avenue, Northvale, NJ 07647 © 1999 Leica Camera Inc

The Catbird Seat

A SIX-PACK OF FAME

by Pete Dunne

"I know you," the liquor store owner shouted from across the counter (and a distance of three feet).

"Yeah, I'm a patron," I said, wishing it were not so. It wasn't the kind of liquor store you would visit to buy a fine merlot to impress your friends. It was the kind where you would go to buy lottery tickets, beer, and jug wine for the times you aren't impressing friends.

"I mean, you're that bird-watching guy, right? The one on the CD-ROM? Hey," he shouted to several pro-wrestling fans stocking up on brews for Monday Nitro. "This guy's a famous bird watcher."

Never has anonymity seemed so dear. Don't get me wrong. I'm vain. I like recognition. I'm more used to dealing with people who only assume they know me as opposed to people who actually do.

Take the guy I ran into at the Cape May Hawk Watch one day; one of those name-dropping types. Faster than you could say, "Hi, how are you," he struck up a conversation focused on his favorite theme.

"Hey, do you know Harold Axtell?" he invited. I assured him I did.

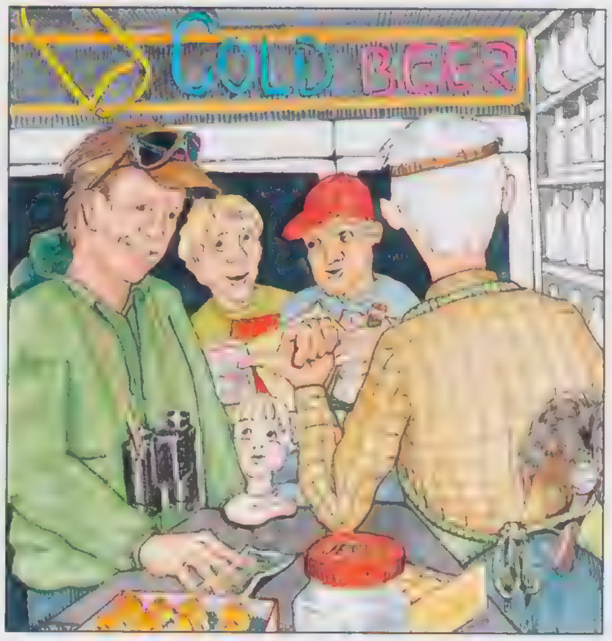
"Me and Harold bird together all the time. Do you know Roger Tory Peterson?"

I told him we'd met, and I learned, predictably, that he and Roger birded together all the time, too.

"Do you know Pete Dunne?"

I considered saying no, because although I've made the study of this individual my life's work, I cannot honestly say that I really know Pete Dunne—but yes seemed closer to the truth. Much to my surprise I learned that like Dr. Peterson and Dr. Axtell, this gentleman and I went birding together all the time, too.

At this point, someone on the platform pointed out that I was Pete Dunne. Hesitating only a moment, the man introduced himself and suggested we go birding.



On several occasions, I've had people come up to me and start reminiscing about the time we birded Big Bend or the Grand Manan or some other place I've never been.

When I point this out, they seem momentarily perplexed and then ask: "Aren't you Kenn Kaufman?"

"No," I'll reply. "Kenn's a better birder than I am. I'm the writer who birds; Kenn's the birder who writes."

"Oh," they'll say.

On another wonderfully sublime occasion, I was the keynote speaker at an assembly of wildlife educators at their annual conference. The person who introduced me, the director of the state fish and game department, whipped the audience into a frenzy of anticipation by expounding upon my exploits, which she said included years of leading tours, acknowledged expertise in the field of bird identification, and authorship of one of birding's most celebrated field guides.

I was mentally preparing to open my address with a humble disclaimer—but that proved unnecessary.

"Ladies and gentlemen," she said, "Please welcome Jon Dunn."

Oh, well. Jon's a better birder, too.

You can't spend 25 years in a field and remain anonymous forever. Every printed mugshot is a nail in anonymity's coffin. Every appearance on the banquet circuit is a coming out. But I still wasn't prepared for celebrity status in the local package goods store.

"No kidding?" one of the patrons intoned, walking over and reaching to take my hand. "What's it like being a famous birder?" he asked.

"Pretty ordinary . . . in an unconventional way."

"My wife likes birds," he continued.

"Small world," I said. "Can I have my change, please?"

"Hey, do you know that guy who works at that bird place in Cape May?"

"Jon Kaufman?" I suggested.

"Yeah, that's the guy. I read about him doing this 24-hour bird-watching contest. Hey, you want a beer?"

Fame. ■

ILLUSTRATION BY JEFF SIPPLE

Scarlet Macaws

PHOTOGRAPHED BY RICK MARSI , CARARA, COSTA RICA

A New Dimension in Birding Optics

The Brandon Master Birder Spotting Scope

Built by VERNONscope of New York–manufacturers of fine telescopes since 1958–the Brandon Master Birder represents a major breakthrough in optical design: a three-dimensional view with no vignetting, even for eyeglass wearers. Custom designed for birding, its many advanced features make the Brandon Master Birder an instrument of envy for even the most discriminating observer.

- Unique Amici prism provides three-dimensional effect unlike any other scope on the market, with no vignetting.
- Phenomenal eight-foot minimum focus distance for studying fine feather detail up close on birds.
- Unsurpassed 65° wide-angle view, even for eyeglass wearers, thanks to the scope's oversized eyepiece and extra-long (1¼") eye relief.

- Camera adaptable in seconds for full frame photographs.
- 80mm f/5.6 triplet lens design with state of the art multicoated lenses provides a bright image, even in low light.
- Black rubber, moisture-resistant armor coating.
- Free carrying case.

Introductory price is $995 direct from our Binghamton factory or from your favorite dealer, including the following showroom and mail-order dealers:

Pocono Mountain Optics, Moscow, PA (800) 569-4323
Christophers, Ltd., Norman, OK (800) 356-6603
Eagle Optics, Middleton, WI (800) 289-1132
Shutan Camera and Video, Chicago, IL (800) 621-2248
F.C. Meichsner Co. Inc., Boston, MA (800) 321-8439
Perceptor, Schomberg, Ontario (905) 939-2313
Hands On Optics of Maryland (301) 482-0000
Lumicon, Livermore, CA (800) 767-9576
Enerdyne, Suttons Bay, MI (616) 271-6033
For the Birds, Inc., Blacksburg, VA (800) 742-4737

Call or write today for a free in-depth brochure.

VERNONscope & company
Division of Gould Precision Optics, Inc.
Phone: (607) 722-5697
Toll Free (in USA) (888) 303-3526 • Fax: (607) 722-7939
151 Court Street Binghamton, New York 13901

LIVING BIRD

For the Study and Conservation of Birds

AUTUMN 1990

Scarlet Macaws

PHOTOGRAPHED BY RICK MARSI, CARARA, COSTA RICA

A New Dimension in Birding Optics

The Brandon Master Birder Spotting Scope

Built by VERNONscope of New York–manufacturers of fine telescopes since 1958–the Brandon Master Birder represents a major breakthrough in optical design: a three-dimensional effect with no vignetting, even for eyeglass wearers. Custom designed for birding, its many advanced features make the Brandon Master Birder an instrument of envy for even the most discriminating observer.

- Unique Amici prism provides three-dimensional effect unlike any other scope on the market, with no vignetting.
- Phenomenal eight-foot minimum focus distance for studying fine feather detail up close on birds.
- Unsurpassed 65° wide-angle view, even for eyeglass wearers, thanks to the scope's oversized eyepiece and extra-long (1¼") eye relief.

- Camera adaptable in seconds for full frame photographs.
- 80mm f/5.6 triplet lens design with state of the art multicoated lenses provides a bright image, even in low light.
- Black rubber, moisture-resistant armor coating.
- Free carrying case.

Introductory price is $995 direct from our Binghamton factory or from your favorite dealer, including the following showroom and mail-order dealers:

Pocono Mountain Optics, Moscow, PA (800) 569-4323
Christophers, Ltd., Norman, OK (800) 356-6603
Eagle Optics, Middleton, WI (800) 289-1132
Shutan Camera and Video, Chicago, IL (800) 621-2248
F.C. Meichsner Co. Inc., Boston, MA (800) 321-8439
Perceptor, Schomberg, Ontario (905) 939-2313
Hands On Optics of Maryland (301) 482-0000
Lumicon, Livermore, CA (800) 767-9576
Enerdyne, Suttons Bay, MI (616) 271-6033
For the Birds, Inc., Blacksburg, VA (800) 742-4737

Call or write today for a free in-depth brochure.

VERNONscope & company

Division of Gould Precision Optics, Inc.
Phone: (607) 722-5697
Toll Free (in USA) (888) 303-3526 • Fax: (607) 722-7939
151 Court Street, Binghamton, New York 13901

A Publication of the
Cornell Laboratory of Ornithology

LIVING BIRD

AUTUMN 1999 VOLUME 18 NUMBER 4

GREETINGS FROM SAPSUCKER WOODS

I remember reading Aldo Leopold's *A Sand County Almanac* as a teenager in the 1960s, and it had an immediate impact on me—like reading Henry David Thoreau's *Walden* for the first time. Leopold's writing style especially struck me: sparse, simple, and yet so evocative and persuasive as he laid out his vision for a new ethic in which people would live in harmony with the natural environment.

To me, Leopold's writings are even more meaningful than Thoreau's. Though they were both dreamers and idealists, Leopold was much more practical than Thoreau. His writings were never airy, philosophical musings. He had concrete ideas about what we could do to minimize the negative impact of humans on the earth's ecosystems, and he founded the world's first academic program in wildlife conservation at the University of Wisconsin.

Leopold's untimely death in 1948, at the age of 61, was an enormous loss to the conservation community. He was preparing *A Sand County Almanac*—the work that would be an enduring testament to his life and his beliefs—for publication at the time of his death, and it was released the following year, in 1949.

To celebrate the 50th anniversary of the publication of this seminal work, we dedicate this issue of *Living Bird* to Aldo Leopold, one of the greatest Americans of this century. Stan Temple, a professor in the department Aldo Leopold founded at the University of Wisconsin-Madison, wrote a tribute to Leopold on page 8. We hope this article will inspire you to read or reread his *Almanac*—a book that is more important than ever as we prepare to enter the 21st century.

Tim Gallagher
Editor-in-Chief

Cover: A male Red-bellied Woodpecker takes a break from foraging to soak up the warm sunlight on a crisp autumn morning. Tom Vezo took this intimate portrait from a blind set up near his home on Long Island, New York.

Right: Aldo Leopold, pioneering conservationist, brilliant essayist, and avid birder rests with his dog on his farm in Wisconsin. See article on page 8. Photograph courtesy Aldo Leopold Foundation.

Back Cover: Cliff Beittel captured the subtle beauty of this Savannah Sparrow while photographing wildlife in Churchill, Manitoba—one of Canada's premier birding areas.

8 THE BIRDS OF ALDO LEOPOLD *by Stanley A. Temple*
Though his most famous essays were published half a century ago, Aldo Leopold's remarkable writings offer lasting inspiration to conservationists worldwide.

16 JUST PASSING THROUGH *by George Oxford Miller*
Birds counts at Virginia's Kiptopeke State Park set East Coast records for numbers and species.

22 BIRDING WITH THE CORPS OF DISCOVERY *by Kristi G. Streiffert*
The unsung scientific accomplishments of Meriwether Lewis.

30 SPOTTED OWLS AND FIGHTER JETS *by Beth Davidow*
Can these threatened birds exist side by side with F-16 fighter jets?

Departments

4 LETTERS

5 BIRDNEWS

Columns

6 SPOTLIGHT *by David S. Wilcove*
Gullible bird watchers.

35 PICTURE PERFECT *by Tim Gallagher*
Developing an artist's eye.

38 THE CATBIRD SEAT *by Pete Dunne*
Words to lead by.

LIVING BIRD

AUTUMN 1999 VOLUME 18 NUMBER 4

Editorial Staff

Editor-in-Chief: Tim Gallagher
Design Director: Kat Dalton
Associate Editor: Leslie Intemann
Technical Editors: Kevin J. McGowan
Kenneth V. Rosenberg
Publications Assistant: Patty Porupski
Contributing Editors: Jack Connor
Pete Dunne
Mel White
David S. Wilcove
Advertising Manager: Barbara Guttridge

Administrative Staff

Louis Agassiz Fuertes Director
John W. Fitzpatrick

Associate Director
Scott Sutcliffe

Director, Education/Citizen Science
Richard E. Bonney, Jr.

Director, Library of Natural Sounds
Jack W. Bradbury

Director, Bioacoustics Research Program
Christopher W. Clark

Director, Bird Population Studies
André A. Dhondt

Director, Conservation Science
John W. Fitzpatrick

Director, Publications
Tim Gallagher

Curator, Systematics & Collections
Kevin J. McGowan

Director, Operations
Carol Pyhtila

Administrative Board

Edwin H. Morgens, Chair

Ellen G. Adelson
E. Edward Bruce
Peter J. Bruns
Thomas E. Donnelley II
Jean W. Douglas
Theodore L. Eliot, Jr.
Jane C. Engel
Cutberto Garza (ex-officio)
Mary P. Hines
Bruce S. Howard
Ronald R. Hoy
Imogene P. Johnson
Mary Johnston
Austin H. Kiplinger
Randolph S. Little
Linda R. Macaulay
Francis P. Pandolfi
Wendy J. Paulson
Olin Sewall Pettingill, Jr.
Elizabeth T. Rawlings
Frank H. T. Rhodes
Carol U. Sisler
Stanley A. Temple
Charles E. Treman, Jr.
Joseph H. Williams
David W. Winkler

Living Bird, ISSN 1059-521-X, is published in January, April, July, and October by the Cornell Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Telephone: (607) 254-BIRD. *Living Bird* is free to members of the Laboratory, a nonprofit, membership organization. Our mission: "To interpret and conserve the earth's biological diversity through research, education, and citizen science focused on birds." For more information please write to our Membership Department. Membership is $35 a year. The Laboratory assumes no responsibility for unsolicited photographs or manuscripts.

Copyright 1999 Cornell Laboratory of Ornithology.

Visit our web site at <http://birds.cornell.edu>.
Printing by Brodock Press, Utica, New York.
Printed on recycled paper.

Letters

CUBAN EMERALD BY BRUCE HALLETT

PARADISE REVISITED

First, let me congratulate the Cornell Lab of Ornithology for producing a wonderful magazine. Each issue of *Living Bird* provides articles that are pertinent and insightful. The photographs that accompany the articles are superb. I look forward to the arrival of every issue. Keep up the good work! Second, I would like to comment on Rachel Dickinson's article, "Birding in Paradise," that appeared in the Spring 1999 issue. I lived on Andros Island for nearly eight years, less than five miles from Small Hope Bay Lodge. My jaw nearly hit the floor when I saw the article and pictures of the beautiful place I used to call home. I formerly lived on Fresh Creek and was extremely fortunate to swim with the dolphins there on many occasions. The author brought back many pleasant memories spent birding the pine yards, coppices, marshes, and beaches of Andros. As Ms. Dickinson describes, many fantastic birds call the Bahamas home, either as residents or migrants. I recommend birding Andros to anyone who prefers to be off the beaten track (Nassau it is not!) and enjoys the solitude of a tropical (actually subtropical) paradise. The photographs by Bruce Hallett that accompanied the article were excellent and reminded me of some old avian friends. It was nostalgic for me to see pictures of some of the same trails I used to walk along searching for birds. I was also struck by the photographs of Small Hope Bay, which made me appreciate again the unbelievable waters surrounding Andros. I also laughed at the rusted hulk of the Jeep that I used to walk past while birding, stuck between the ocean on one side and nearly impenetrable mangroves on the other. Thank you, Ms. Dickinson and Mr. Hallett, for returning me to Paradise. You did a wonderful job.

Jeff Babson
Vail, Arizona

BACK FROM THE BRINK

After reading the article "Mission Accomplished" in the Summer 1999 issue many sentimental feelings came over me as I remembered the summers I spent at the "Hawk Barn" as a young girl. At that time I didn't realize the scope of what was actually being accomplished by all the dedicated people involved in the Peregrine Falcon recovery program; however, over the years I have grown to appreciate that accomplishment and to see how important conservation and endangered species programs are. I am proud to say I got to know many of the people involved in this project over the years and greatly respect their dedication and enthusiasm that made it such a success. To see a peregrine grace the cover of your periodical and to know that this amazing bird may soon be removed from the Endangered Species List is truly wonderful.

Penny Dague-Parrish
Rochester, Vermont

We welcome letters from readers. Write to The Editors, *Living Bird,* 159 Sapsucker Woods Road, Ithaca, New York 14850, or send e-mail to <livingbird@cornell.edu>.

BirdNews

Peregrine Falcon Flies off Endangered Species List

Peregrine Fund founder Tom Cade (center), Secretary of the Interior Bruce Babbitt (left), and Idaho senator Mike Crapo celebrate the delisting of the peregrine.

RUSSELL THORSTROM/THE PEREGRINE FUND

It's finally official: the American Peregrine Falcon (*Falco peregrinus anatum*) is no longer classified as endangered under the Endangered Species Act. We mentioned in the last issue of *Living Bird* that the falcon was slated to be delisted and The Peregrine Fund would be celebrating the recovery of the species on August 20–22, 1999, at its World Center for Birds of Prey in Boise, Idaho (see "Mission Accomplished," Summer 1999). But it came as a complete surprise to almost everyone when Secretary of the Interior Bruce Babbitt visited the center in person the first morning of the event and announced the peregrine's delisting, culminating almost two decades of work on the falcon's recovery.

"It's a spectacular summer for America's great birds," said Babbitt. "The Bald Eagle, the Aleutian Canada Goose, and today the Peregrine Falcon. And beneath the wings of all their recoveries stands America's great law: the Endangered Species Act."

The U.S. Fish and Wildlife Service (USFWS) classified the Peregrine Falcon as endangered in 1970, under the Endangered Species Conservation Act of 1969, the current law's predecessor. At that time, the falcons had been extirpated as a breeding species east of the Mississippi and their numbers had plummeted by more than 80 percent in the rest of this country, as a result of DDT in the environment, which inhibited the birds' ability to produce viable eggs.

The banning of DDT in 1972 set the groundwork for the falcons' recovery but, according to Babbitt, the protections provided by the Endangered Species Act and extraordinary efforts by state and federal agencies, Canadian government agencies, universities, private organizations, and dedicated individuals involved in the captive-breeding and reintroduction of the birds were responsible for helping the peregrine to recover so quickly and successfully.

The original goal of the recovery was to have 631 pairs of peregrines breeding in North America, which has long been surpassed. At least 1,650 breeding pairs currently exist in the United States and Canada and probably many more in Mexico.

"The Peregrine Falcon is a perfect example of the success we can have when we work in partnership to recover endangered species," said Babbitt. "With the help of the protections provided by the Endangered Species Act and the visionary work in captive breeding and release efforts by The Peregrine Fund, the University of Minnesota's Raptor Center, and the University of California's Santa Cruz Predatory Bird Research Group, the peregrine flies through the skies of almost every state in the Union."

Does the Peregrine Falcon's removal from the Endangered Species List mean that the close monitoring of the bird is over? No, many safeguards for the falcon will remain in effect. The species will continue to be protected by the Migratory Bird Treaty Act, which prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests except when specifically authorized by the Department of the Interior. In addition, the Endangered Species Act requires a species to be monitored for at least five years after delisting. In the Peregrine Falcon's case, the USFWS will monitor the species for 13 years, conducting population surveys every three years, for a total of five surveys, determining the status of at least two generations of Peregrine Falcons. If the surveys show that the bird needs the full protection of the Endangered Species Act, the USFWS will relist the Peregrine Falcon.

AOU COMES TO CORNELL

This past August 10–14, Cornell University hosted the 117th annual meeting of the American Ornithologists' Union (AOU). This was actually the first time this venerable scientific organization had ever met at Cornell and provided many researchers a chance to visit the Lab of Ornithology and become familiar with our work here. A highlight of the meeting for the Lab was a half-day symposium on citizen-science-based research, which featured talks on three Lab projects and closing remarks by Lab director and AOU president-elect John Fitzpatrick. Read more about this fascinating symposium in the current issue of *Birdscope* ("Citizen Science," Autumn 1999).

Spotlight

GULLIBLE BIRD WATCHERS

by David S. Wilcove

Will Kelp Gull sightings in North America become commonplace in the decades ahead?

Over time, my enthusiasm for chasing out-of-range birds (or "vagrants") has virtually disappeared. Whereas I once sought them out with the relentless determination of a bounty hunter, I now find myself feeling a certain measure of pity for those hapless birds that find themselves hundreds or thousands of miles off course in an unfamiliar, even hostile, environment. Far better, I've concluded, to see a species in its customary range and habitat than to spot it where it doesn't belong. But when a Kelp Gull (*Larus dominicanus*)—ordinarily a denizen of sub-Antarctic waters and sighted only a handful of times in the United States—turned up in St. Mary's County, Maryland, less than an hour from my home, some of that old enthusiasm sprang back to life, and I found myself hurriedly rearranging my schedule to accommodate some "urgent personal business" (or so I told the folks at the office).

I called a bird-watching friend, who agreed to join me in the quest, got the telescope out of the closet, and double-checked the directions on a map. Only then did I realize that I didn't have a clue as to how to identify a Kelp Gull. My problem was not a lack of familiarity with the species. On the contrary, only six months earlier, I had seen dozens of Kelp Gulls on a trip to South Africa. There were Kelp Gulls visible from the balcony of my hotel room in Durban and Kelp Gulls scrounging for handouts along the Cape Town waterfront. But the truth is that I had paid them scant attention. Because the Kelp Gull is the only dark-mantled gull that regularly occurs in South Africa, once I saw that the gulls around me possessed black backs and wings, I knew they were kelps, and I never bothered to study them closely. As Sherlock Holmes might have said to me, "You see, but you do not observe." Now, faced with the challenge of distinguishing an out-of-place Kelp Gull from the four or five dark-backed gulls that regularly occur in North America, I was close to clueless.

When we arrived at the little town of Sandgates, near the mouth of the Patuxent River, the task of finding the errant Kelp Gull was made considerably easier by the small army of telescopes that were aimed at one gull in particular among a motley gathering of Great Black-backed, Herring, and Ring-billed gulls hanging around a small dock. Here, in the United States, I finally gave the Kelp Gull the attention it had deserved when I was in South Africa.

The bird's small size and yellowish legs immediately distinguished it from the nearby Great Black-backed Gull—that much was obvious. But how could I tell it from a Lesser Black-backed Gull, another small, dark-mantled gull with yellowish legs? Fortunately, most of the Lesser Black-backed Gulls that show up in North America belong to the race that breeds in Iceland and the British Isles south to northern Spain. These birds have slate-gray rather than blackish backs. The back of the St. Mary's gull was a deep, velvety black. However, Lesser Black-backed Gulls from Scandinavia and points farther east, which may wander to this side of the Atlantic from time to time, have much darker backs than their British kin and could easily be confused with a Kelp Gull. The St. Mary's bird, in fact, had been identified initially as a Lesser Black-backed Gull from northern Europe, until some sharp-eyed observers discerned that the pattern of the primary feathers and the proportions of the bill and wings were inconsistent with Lesser Black-backed Gull but a perfect fit for Kelp Gull.

Once word got out that a Kelp Gull was in Maryland, bird watchers from around the country flocked to see it. I suspect, however, that relatively few among those hundreds of eager observers realized how much their own behavior reflected the ever-changing nature of our avifauna. When the St. Mary's gull was thought to be a Lesser Black-backed Gull, it attracted almost no attention, largely because most bird watchers along the Atlantic Coast have ample opportunities to see Lesser Black-backed Gulls. Every winter, dozens, maybe hundreds, of these birds are recorded from Canada to Florida. Yet less than two decades ago, a sighting of a Lesser Black-backed Gull anywhere in North America would have been unusual. For reasons that are not fully understood, the Lesser Black-backed Gull has increased greatly in numbers in the western Atlantic, so much so that some ornithologists now speculate that a sizable breeding population may exist somewhere in Canada.

Even more surprising to most bird watchers might be the fact that just 50 years ago, a sighting of a *Great* Black-backed Gull in Maryland would have been noteworthy. At that time, this largest of North American gulls was at best a rare winter visitor south of New York. And only a century ago, a sighting of a Great Black-backed Gull anywhere in the United States

ILLUSTRATION BY JOHN SCHMITT

(especially during breeding season) would have surprised and delighted ornithologists.

The close of the 19th century and the beginning of the 20th century was a period of unprecedented slaughter of North American birds. Market gunners decimated populations of waterfowl and shorebirds to supply urban markets with food; eggers ransacked nesting colonies of seabirds, including gulls, puffins, and murres, for much the same reason; and the millinery trade consumed the feathers of all manner of wild birds, even gulls. Within the borders of the United States, Herring Gulls were reduced to a few isolated nesting colonies, while the less common Great Black-backed Gulls vanished completely. To a large degree, the contemporary environmental movement began as a backlash to this carnage. An outraged public demanded that its elected leaders protect our rapidly disappearing birds, with the result that a number of landmark treaties and laws were passed in the early decades of this century.

In subsequent decades, many of the persecuted species staged remarkable comebacks, none more so than the Herring and Great Black-backed gulls. Today, both species regularly nest as far south as North Carolina—far beyond their 19th-century ranges. What has prompted such an increase remains something of a mystery, but I suspect two factors in particular have played essential roles. First, more people live along the Atlantic Coast now than ever before, and they are producing more garbage than ever. This wealth of landfills and dumps has surely been a bonanza for these two feathered garbage-hounds. Second, today's industrialized fishing fleets are catching—and wasting—immense quantities of fish and other marine life. According to one estimate, the world's fishing fleets generate nearly 27 million metric tons of bycatch annually—that's 27 million tons of fish and other marine creatures that are caught and tossed overboard as waste every year. For scavengers such as gulls, this must amount to a smorgasbord of unimaginable proportions.

Our expanding gull population poses a serious threat to the survival of a number of other species, including Roseate Terns and Piping Plovers. The larger, more aggressive gulls have displaced terns from many of the offshore islands where they once nested; Herring and Great Black-backed gulls eagerly consume the eggs and nestlings of both terns and plovers. Conservationists now face the unpleasant task of having to reduce gull populations in certain locations to save these other species—a remarkable change of circumstances in less than a century.

Thus, as I watched that lone Kelp Gull, so admired by bird watchers, I couldn't help but wonder whether, 50 years hence, its presence in the United States would be so welcome. ■

Further Reading

Blodget, B.G. "The East Coast Gull Explosion," *Massachusetts Wildlife* 38, no. 1:12–19.

R grilley

THE BIRDS *of* ALDO LEOPOLD

BY STANLEY A. TEMPLE

Though his most famous essays were published half a century ago, Aldo Leopold's remarkable writings offer lasting inspiration to conservationists worldwide

“There are some who can live without wild things, and some who cannot. These essays are the delights and dilemmas of one who cannot.” So begins Aldo Leopold's *A Sand County Almanac,* one of the century's most influential books on conservation. This year marks the 50th anniversary of the book's publication in 1949, a year after the author's untimely death. Over the past half century, the conservation community has embraced Leopold as its patron saint, and *A Sand County Almanac* has become its scripture.

Nonetheless, Leopold's legacy as a conservation giant was secure even before the publication of *A Sand County Almanac.* He was already acknowledged to be the intellectual godfather of modern wildlife management. Founder of the world's first academic program in wildlife conservation at the University of Wisconsin, he had written prolifically and prophetically about a wide range of conservation issues throughout his career. But it was *A Sand County Almanac* that capped his illustrious career, and one essay in that book, “The Land Ethic,” gave the modern conservation movement an ethical foundation and an often-quoted golden rule: “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community, it is wrong when it tends otherwise.”

How did Leopold come to occupy this lofty position in conservation's pantheon? Several excellent biographies have documented and analyzed Leopold's life and

In addition to being a brilliant writer and conservationist, Aldo Leopold was a lifelong bird watcher. Even in this formal portrait (left), which hangs near his former office in the Department of Wildlife Ecology at the University of Wisconsin-Madison, he sports a well-used pair of birding binoculars.

DEPARTMENT OF WILDLIFE ECOLOGY/UNIVERSITY OF WISCONSIN-MADISON

A SAND COUNTY ALMANAC—AN ENDURING CONSERVATION CLASSIC

Aldo Leopold was not on my mind as I sat in the opening lecture of Conservation 101 during the first week of my freshman year at Cornell. Professor Daniel Q. Thompson was lecturing, and at one point during the hour he asked if anyone in the class had read *A Sand County Almanac*. As I raised my hand and glanced nervously around the room, I saw that I was the only one who had responded. Professor Thompson asked me to share with the class what I thought of the book, and I made a clumsy attempt to recall my impressions from a year earlier. After class, Professor Thompson called me aside and congratulated me on my response. Later in his office he told me that he had been one of Aldo Leopold's graduate students at the University of Wisconsin and explained that *A Sand County Almanac* was a great treasure that I should reread and take to heart.

I had first read Aldo Leopold's masterpiece in 1962 while waiting out a two-day rainstorm alone in a cabin on Lake Erie's Kelley's Island. It was the only reading material I could find in the dilapidated field station owned by my then employer, the Cleveland Museum of Natural History. The book struck a chord with me, as it does with most readers, and I was disappointed when a check with my local bookstore revealed that the book was out of print and unavailable. It wasn't until 1968 when *A Sand County Almanac* was reprinted in paperback that I finally got my own copy and reread it, as Dan Thompson had recommended.

By that time, I was a graduate student at the Cornell Lab of Ornithology, and Professor Joseph J. Hickey was one of my professional heroes. He had played a central role in uncovering the DDT syndrome in raptors, a subject I was then pursuing in my master's degree program. As a member of the Lab of Ornithology's administrative board, he visited Cornell regularly. During one board meeting, he told me he had also been one of Leopold's students and that he held the faculty position at the University of Wisconsin once occupied by Leopold. I was touched by his recollections of Leopold and impressed by his pedigree!

After graduating from Cornell and working for the World Wildlife Fund, I was fortunate enough to be picked as Joe Hickey's successor at the University of Wisconsin. Since then, I have taught the courses in wildlife ecology and conservation originally developed by Leopold during the 1930s. Now it is my turn to ask students in my classes if anyone has read *A Sand County Almanac*. The response today is quite different from what it had been in the class I took at Cornell in 1964. Typically, more than half of each class now has read the book, a reflection of how popular Leopold and his writings have become since the 1960s. I always ask my students to read or reread *A Sand County Almanac*, and I encourage you to do so as well.

—Stanley A. Temple

ALDO LEOPOLD FOUNDATION

Aldo Leopold sits in a shady spot on his farm along the Wisconsin River, working on his journal. As always, his binoculars are close at hand, in case an interesting bird shows up.

writings, but none has so far highlighted the significance of birds in his rise to fame. Although not generally recognized as an ornithologist, Leopold was a keen birder, and it is easy to document how important birds were in his development as a scientist, teacher, author, and philosopher.

Throughout his life Leopold reveled in nature, and he described his joys and insights in an eloquent written legacy that culminated in *A Sand County Almanac* but began in childhood. Armed with a copy of Frank M. Chapman's *Handbook of the Birds of Eastern North America*, a birthday present from his mother, a youthful Leopold spent most of his free time in the field observing birds. His skills as a writer developed at an early age, and many of his unpublished writings were preserved by individuals who recognized their value. His childhood journals included detailed accounts of birds around his boyhood home in Iowa. As an 11-year-old, Leopold recorded his impressions of a Bell's Vireo in remarkable detail for so young a bird watcher: "This particular vireo reminds one of a chat in his actions. In plumage he might be mistaken for a yellowthroat, except for the white throat and more greenish sides. His haunts were saplings and the lower branches of trees, and seen against the light his plumage had a fluffy appearance. His song was a peculiar sputtering, on a rising scale, and was given during his searches for insects. He did not hang by his feet like others of his genus, but kept the head raised and looking above him. He was not shy, on the contrary quite inquisitive, and was not restricted to the thickets."

In the same year, he wrote a school essay about his bird-watching hobby. "I like to study birds. I like the wren best of all birds. We had thirteen nests of wrens in our yard last summer. We hatched one hundred and twenty young wrens last summer. I like wrens because they do more good than almost any other bird, they sing sweetly, they are pretty, and very tame." He goes on to list 39 other species that he had recorded in his yard.

As a teenager, Leopold was sent east to attend boarding school in Lawrenceville, New Jersey. His frequent letters home recorded his continuing passion for birds: "I have seen many birds of beauty, but not one of such dazzling plumage as the Blackburnian [Warbler]. . . . I have never seen such a color, soft and beautifully offset by the black, yet apparently about to burst into flame, like a red hot coal. The Blackburnian is a prize for rarity alone, but doubly one for his gorgeous plumage."

Even while he was a full-time student Leopold spent most of his spare time birding. At the end of his first semester he wrote, "In finding new species, I have been also fortunate, thirteen have been added up to date. Inclusive of these I am now acquainted with 274 species of birds in the United States. Of course this is but idle talk and not by any means the end or object of my study of Ornithology, but still rather interesting to note."

Leopold's concerns about bird conservation issues emerged during his school days. Writing home, he expressed his disapproval of spring duck hunting and somewhat prophetically commented: "I am very sorry that the ducks are being slaughtered as usual, but of course could expect nothing else. When my turn comes to have something to say and do against it and other related matters, I am sure that nothing will be lacking to the good cause." But the young outdoorsman also continued to hunt birds, as he had with his father in Iowa. "But O how the old gun did shoot! I wish I could describe the whole flight [of crows], but suffice it to say that by five o'clock I had ten laid out in a line on the snow. . . . This makes 25 crows less and 250 rabbits more in New Jersey of 1905."

PROTHONOTARY WARBLER BY CHARLES SCHWARTZ/COURTESY OXFORD UNIVERSITY PRESS

By the following spring, however, his attitude toward crows had mellowed. He "had no desire to kill crows or anything else, in spite of favorable conditions." Describing the discovery of a crow's nest near campus, he said, "I was tempted to take some crow's eggs yesterday, and make Easter eggs . . . , but I . . . would rather see the old crows happy . . . , rascals though they be." His enthusiasm for his favorite species remained unbridled: "Perfectly motionless, a bird with a spread tail and greenish back perches on the trunk of a sapling. He turns! A flash of black and gold! And Ye Gods!—A Hooded Warbler! Nervously you fumble for glasses, get them focussed successfully, and look and look and look. . . . O what a beauty!"

I suspect that had ornithology been an option for a career, Leopold would have pursued bird study in college, but at the time forestry was the most promising field of study that ensured working outdoors in natural environments, and Yale was the place to go. As a student at Yale, Leopold prepared himself for a career as a forester, but he kept his passion for birds. Describing a spring visit to one of his favorite birding haunts, Leopold notes: "Towhees and Thrashers scratch loudly under the bushes, Field and Vesper Sparrows straggle along overhead, the Swifts titter invisible above, and a Grosbeak carols at his meal of birch buds. . . . A Field Sparrow all the while is singing a strange . . . combination of his own song and that of the Black-throated Green Warbler. . . . In itself worth the trip. Puzzle—does he do it from memory, accident, or has the Black-throated Green really arrived and been singing? Most probably the latter, he is due."

Reflecting on a class field trip to the Yale Forest School Grounds, Leopold lamented, "I saw many birds walking out and back that day—and it aroused a kind of regret that I can't get out and just loiter around the woods anymore. One really gets to see nothing . . . only just enough to remember how much there is to see on a May morning."

Wisconsin Gothic? Aldo Leopold and his daughters, Nina (left) and Estella, work on refurbishing his beloved "shack"—a former chicken coop and the only remaining building on a worn-out farm he bought in 1935. Leopold escaped to this special place at every opportunity and wrote some of his most famous essays there.

ALDO LEOPOLD FOUNDATION

In 1909, Leopold, a freshly graduated Ivy-League forester, took his first job, as a forest assistant on the newly created Apache National Forest in Arizona Territory. There Leopold was exposed for the first time to a big wilderness full of wildlife. Now trained in the traditional forester's view of conservation as the wise use of natural resources, Leopold for the first time started to form his ideas on managing wildlife as a resource. The Forest Service encouraged his initiatives in wildlife conservation. His professional focus was on game, but his personal interest in nongame wildlife, especially birds, persisted. During his 15 years as a forester in the Southwest, Leopold steadily evolved from a forester to a wildlife manager (even though the term was unknown at the time) and eventually to an ecosystem manager.

While living in the Southwest, Leopold began publishing scientific papers about wildlife, especially birds. He published 22 papers (nearly half of his publications from 1909–1924) on a wide range of ornithological subjects, ranging from ducks to Purple Martins. He later reflected in *A Sand County Almanac* on some of his favorite southwestern birds, including the Thick-billed Parrot. "He is a discovery only because so few have visited his wild haunts. Once there, only the deaf and blind could fail to perceive his role in the mountain life and landscape. . . . As you begin your steep ascent out of the canyon, some sharp-eyed parrot, perhaps a mile away, espies this strange creature puffing up the trail. . . . With a whoop and a shout the whole gang is a-wing and coming at you. As they circle overhead you wish fervently for a parrot dictionary. Are they demanding what-the-devil business you have in these parts? Or are they, like an avian chamber of commerce, merely making sure you appreciate the glories of their home town, its weather, its citizens, and its glorious future as compared with any and all other times and places whatsoever? . . . There flashes through your mind the sad premonition of what will happen when the road is built, and this riotous reception committee first greets the tourist-with-a-gun."

In 1924, Leopold was transferred to the Forest Service's Forest Products Laboratory in Madison, Wisconsin. For a passionate field naturalist who had experienced the delights of living and working in wilderness areas of the West, a desk job as the administrator of a laboratory left Leopold feeling like “a fish out of water.” But, it did return him to the familiar midwestern environment of his boyhood, where he no longer viewed the landscape with a child’s awe but with the critical eye of a mature ecologist and conservationist. Pursuing his growing involvement in the wildlife conservation arena was no longer as easy as it had been when he was in the field, and his dissatisfaction with his job grew.

In 1928, Leopold made the difficult decision to leave the Forest Service and pursue a career focused more sharply on wildlife conservation. His wildlife work quickly earned him a reputation as one of the leading thinkers in the conservation field, and in 1933 he published his collected ideas in *Game Management*, a book that defined the field of wildlife management and gave it a set of guiding principles and enabling methodologies. Although the title suggested that the subject was limited to hunted species, Leopold made it clear that his ideas applied to other species as well. “Songbirds and other nongame animals are not yet thought of as subject to management. The fact that the objective is something to look at, rather than something to shoot, catch, or trap is, from the scientific point of view, irrelevant. It remains true that population levels are determined by environment, and the environment of nongame species is subject to manipulation or management just as in game or fish.”

Leopold joined the faculty of the University of Wisconsin in 1933, filling a specially created professorship in game management—the first of its kind at any university. In addition to developing an innovative program in teaching and research, Leopold began to return to his birding roots in a more conspicuous way. A pivotal event was his 1935 purchase of a worn-out farm along the Wisconsin River that was to become his weekend retreat and the setting for *A Sand County Almanac.*

Anyone who has read—and probably reread—*A Sand County Almanac* knows how significant birds were to Leopold when he was at “the shack.” He mentions 91 species of birds in the text, the book’s artwork features 28 bird portraits by Charles W. Schwartz, and several favorite species are the subjects of individual essays that reveal Leopold as a skilled naturalist and eloquent writer.

In “The Geese Return” Leopold observes that, “One swallow does not make a summer, but one skein of geese, cleaving the murk of a March thaw, is the spring. A cardinal, whistling spring to a thaw but later finding himself mistaken, can retrieve his error by resuming his winter silence. . . . But a migrating goose, staking two hundred miles of black night on the chance of finding a hole in the lake, has no easy chance for retreat. His arrival carries the conviction of a prophet who has burned his bridges.”

In “Sky Dance” Leopold describes the courtship displays of a favorite bird, the American Woodcock. Recording the timing of these displays led to what became one of his passionate field activities, recording phenologies, the order in which natural events occur during the day or the year. “I owned my farm for two years before learning that the sky dance is to be seen over my woods every evening in April and May. Since discovering it, my family and I have been reluctant to miss even a single performance. The show begins on the first warm evening in April at exactly 6:50 P.M. The curtain goes up one minute later each day until June 1 when the time is 7:50. . . . At daybreak the whole show is repeated. In early April the final curtain falls at 5:15 A.M.; the time advances two minutes a day until June, when the performance closes for the year at 3:15 A.M.”

AMERICAN WOODCOCK BY CHARLES SCHWARTZ/COURTESY OXFORD UNIVERSITY PRESS

The return of spring migrants was one of Leopold’s favorite seasonal events. In “Back from the Argentine” he describes the return of Upland Sandpipers: “When dandelions have set the mark of May on Wisconsin pastures, it is time to listen for the final proof of spring. Sit down on a tussock, cock your ears at the sky, dial out the bedlam of meadowlarks and redwings, and soon you may hear it: the flight-song of the upland plover, just now back from the Argentine.”

Another of Leopold’s pastimes at the shack was bird banding. His essay “65290” is the ultimate commentary on the personal rewards of amateur bird study, in this case a tribute to a banded Black-capped Chickadee: “To band a bird is to hold a ticket in a great lottery.

Most of us hold tickets on our own survival, but we buy them from the insurance company, which knows too much to sell us a really sporting chance. It is an exercise in objectivity to hold a ticket . . . on the chickadee that may some day re-enter your trap, and thus prove that he is still alive. . . . Thus in our family, the question of whether chickadee 65290 would survive for still another winter was, for five years, a sporting question of the first magnitude. . . . 65290 has long since gone to his reward. I hope that in his new woods, great oaks full of ants' eggs keep falling all day long. . . . And I hope that he still wears my band."

Leopold (center) poses with graduate students at the shack in the early summer of 1947, less than a year before his tragic death at age 61, while helping to fight a fire on a neighbor's land.

R. McCABE/LEOPOLD COLLECTION/UNIVERSITY OF WISCONSIN ARCHIVES

Leopold often tied bird to place in a way that combined his love of the bird, such as the Sandhill Crane, with his reverence for its habitat. No one has ever done this with more skill than Leopold did in "Marshland Elegy." "High horns, low horns, silence, and finally a pandemonium of trumpets, rattles, croaks, and cries that almost shakes the bog with its nearness, but without yet disclosing whence it comes. At last a glint of the sun reveals the approach of a great echelon of birds. On motionless wing they emerge from the lifting mists, sweep a final arc of sky, and settle in clangorous descending spirals to their feeding grounds. A new day has begun on the crane marsh."

Leopold was deeply concerned about the loss of species to human-caused extinction. His reflections on the extinction of the Passenger Pigeon, "On a Monument to the Pigeon," stand as one of the most moving epitaphs in ornithological literature: "There will always be pigeons in books and in museums, but these are effigies and images, dead to all hardships and to all delights. Book-pigeons cannot dive out of a cloud to make the deer run for cover, or clap their wings in thunderous applause of mast-laden woods. . . . They know no urges of the seasons; they feel no kiss of the sun, no lash of wind and weather. They live forever by not living at all."

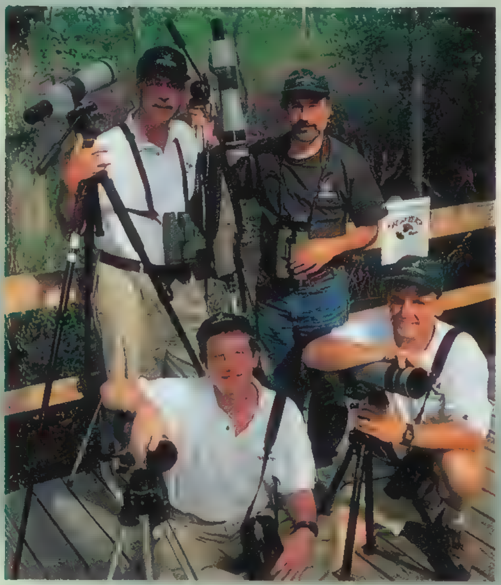
Perhaps because he participated in so many of the activities popular with amateur ornithologists, Leopold recognized the tremendous potential amateurs have for contributing to science. In "Natural History" and "Wildlife in American Culture" he celebrates the accomplishments of amateurs such as Margaret Nice and challenges other dedicated amateurs to make meaningful contributions: "I talk here about the pleasure to be had in wild things, about natural history as a combination of sport and science. . . . There was a time when ladies and gentlemen wandered afield not so much to learn how the world is put together as to gather matter for tea-time conversation. This was the era of dickey-bird ornithology. . . . The amateur student is no longer confined to pleasant ambles in the country resulting merely in lists of species. . . . The amateur can, if he has the imagination and persistence, select and solve actual scientific natural-history problems as virgin as the sun."

A Sand County Almanac can, of course, be enjoyed as a natural history book that features some fine writing about wildlife and that traces Aldo Leopold's evolution as a conservationist. But it is really about all the world's living things and the evolution of our complex relationships with nature. Leopold's prescriptions for "a state of harmony between men and the land" are both timely and timeless. In his own development as a scientist, teacher, and philosopher, birds played a pivotal role, and in his role as the spiritual leader of the modern environmental movement, Leopold skillfully used birds as evocative images and potent symbols. Fifty years later, the Cornell Laboratory of Ornithology adopted a mission—"to interpret and conserve the earth's biological diversity through research, education, and citizen science focused on birds"—that echoes the philosophies first expressed so eloquently by Aldo Leopold in *A Sand County Almanac.* ■

Stanley A. Temple is the Beers-Bascom Professor in Conservation in the department Aldo Leopold founded at the University of Wisconsin-Madison.

Charles Schwartz illustrations and text excerpts from A Sand County Almanac: and Sketches Here and There *by Aldo Leopold. Copyright 1949, 1977 by Oxford University Press, Inc. Used by permission of Oxford University Press, Inc.*

SAPSUCKERS' DELIGHT



Clockwise from top John Fitzpatrick,
Ken Rosenberg, Steve Kelling and Kevin McGowan

The "Sapsuckers" birding team from The Cornell Lab of Ornithology, Ithaca, NY, <www.birds.cornell.edu> knows optics. Optics define their birding and wildlife observations. They even publish evaluation studies covering binoculars or spotting scopes in the lab's magazine "Living Bird". They consider all good optics. Some are very good; others are even better.

For their personal and professional use, they use Swarovski HD spotting scopes and 10X50 SLC binoculars. According to team members, "The brilliant resolution, image contrast, brightness, rugged waterproof integrity and overall performance of Swarovski optics are generally superior to any other brands we have tested. Also, the Swarovski Optik Limited Lifetime Warranty* and speedy repair service is the very best. Check it out."

Now don't just accept the "Sapsuckers' Delight" as gospel truth. Visit your nearest Swarovski Optik dealer and see for yourself or ask a friend who owns a Swarovski spotting scope or binocular. Call 800-426-3089 or visit **www.swarovskioptik.com**

10X50MM SLC BINOCULAR

ST-80 HD SPOTTING SCOPE

Tom Vezo

LAB'S MASCOT

SWAROVSKI
OPTIK
1949 - 1999

With The Eyes of a Hawk

*Original warranty card must be postmarked within 25 days of purchase from an authorized Swarovski dealer in good standing. Entire product must be returned with warranty claim by registered warranty holder.

Swarovski Optik North America, Ltd.
One Wholesale Way, Cranston, RI 02920

ARTHUR MORRIS/BIRDS AS ART

At right, hawk watchers at Kiptopeke State Park scan the skies for migrating raptors, such as the juvenile Cooper's Hawk (above). As a hawk-watching hotspot, Kiptopeke rivals Cape May, New Jersey, and actually greatly surpasses Hawk Mountain, Pennsylvania.

JUST PASSING THROUGH

BY GEORGE OXFORD MILLER

Bird counts at Virginia's Kiptopeke State Park set East Coast records for numbers and species

We round the corner of the wooded trail and see a hawk fluttering in the mist net. Brian Johnson drops his cloth holding sacks and breaks into a run. "It's a sharpie!" he yells. Just as he reaches the struggling hawk, it pulls free and flaps away. We have to content ourselves with the object of the Sharp-shinned Hawk's attention: a Field Sparrow captured in the net.

Although Johnson's primary interest is banding songbirds during the fall migration at Kiptopeke State Park on Virginia's eastern shore, the hawks soaring overhead often sidetrack him. When he's not banding songbirds, he helps band raptors. A blind and nets set at the edge of an adjacent field capture raptors lured in by a decoy pigeon. Today the winds carry most hawks high across the cobalt blue sky—too high to be lured into the nets—but other days have seen more action.

"September 22 set lots of records," says Marshall Iliff, the hawk-watch coordinator. "Rain and north winds piled up the hawks behind the storm. When the rain stopped, we had 16 species in one hour: Rough-legged, Red-shouldered, and Broad-winged hawks;

GEORGE O. MILLER

BHL

Blank Page Digitally Inserted

TOM VEZO

A southward-bound Osprey passes overhead (above). At right, Brian Johnson, songbird banding coordinator at Kiptopeke, untangles a bird from a mist net. The habitat at Kiptopeke State Park (above right) consists of grassy dunes and forest at the edge of the Chesapeake Bay. Marshall Iliff (below right) is hawk-watch coordinator for KESTREL—the Kiptopeke Environmental Station Research and Education Laboratory.

Golden and Bald eagles—every species you could expect to occur here except goshawks."

"It was a record day for Merlins," adds Jamie Cameron, the raptor-banding coordinator. "Everything came over at treetop level. We counted 462 Merlins and banded 51. The next day we banded 41. My hands were really torn up after that. After seven years of waiting, we finally caught a Swainson's Hawk. It was a long time coming."

The two banding stations and a hawk observation platform are part of a comprehensive fall migration study held annually at Kiptopeke State Park. Another banding station is located on Fisherman's Island, the northernmost island on the Chesapeake Bay Bridge and Tunnel and part of the Eastern Shore of Virginia National Wildlife Refuge. The state park, refuge, and bridge islands combine to make the Delmarva Peninsula one of the most productive birding locations on the East Coast during the fall and spring migrations.

Banding songbirds began there in 1963 on private property, and the hawk watch began in 1977 with volunteers. Now, both studies are conducted in the state park and sponsored by the Kiptopeke Environmental Station Research and Education Laboratory (KESTREL), which supports the programs with proceeds from membership, a fall birding festival, and state grants. For the last three years, they have hired a staff of four to coordinate the fall activities.

"Kiptopeke is one of the hottest birding spots on the East Coast," says KESTREL vice-president Brian Tabor as we watch hawks from the observatory platform. "Last year we banded 4,626 songbirds of 83 species and counted more than 60,000 hawks of 17 species."

Famed birding hotspot Cape May, New Jersey, barely beats Kiptopeke with a three-year average of 71,966 hawks per year, versus 69,515 at Kiptopeke. Cape May averaged 89 raptors per hour and Kiptopeke 72. In contrast, Hawk Mountain, Pennsylvania, averages only 17,144 hawks per year and 16 per hour. Each year, some 1,500 raptors are banded at Kiptopeke.

This year, the number of birds counted at Kiptopeke is greater than ever and will probably surpass Cape May. KESTREL's four staff members maintain the stations full-time from August 31 through November 30. With dawn-to-dusk, seven-days-a-week observation, not many birds slip undetected past the expert eyes of the professional and volunteer bird watchers.

Marshall Iliff, the regional editor of *Field Notes,* is the staff hawk watcher. Standing on the hawk-watch platform, he scans a cloudless sky, marred only by the black dots of 100 or so quasiresident vultures that soar back and forth along the coastline. "There's a sharpie up there with the vultures," he casually informs the other people on the platform. We inspect each dot until we each make the identification.

"Sharp-shinned and Cooper's hawks are winding down now that October's over, but we're still seeing 20 to 25 a day," he says. "September is the best month for Peregrine Falcons.

GEORGE O. MILLER (3)

Eighty-one flew over on September 5. I've counted two today. That's more than 700 for the season. Now the red-tails are pushing through."

The way Chesapeake Bay and the Atlantic Ocean surround the Delmarva Peninsula forms a natural funnel for birds migrating south along the coast. Kiptopeke State Park and the Eastern Shore of Virginia National Wildlife Refuge preserve a remnant of the natural forest and marshlands that once provided a continuous corridor for the birds. The combination of reduced habitat and the shape of the land creates a rare opportunity for bird watchers to see dozens of species per day. The KESTREL programs let visitors benefit from the skills of expert hawk watchers and provide a unique opportunity to participate in bird banding.

"So far, in two months we've banded more than 7,200 songbirds. No one on the East Coast gets that many," says Andy Davis, education coordinator for the fall programs. "This is the best-kept secret on the Atlantic shore. We've banded 95 species of warblers, vireos, thrushes, and sparrows. Sometimes we catch 500 birds a day."

The banding team relies heavily on volunteer helpers to assist in recording the vital statistics. "Most of the volunteers are older," says Davis. "We don't tap the university crowd much, but that's how I got my start. The moment I touched my first bird, I knew what I wanted to do for the rest of my life."

During KESTREL's annual Fall Birding Festival in October, hundreds of visitors gain firsthand experience at birding and banding, and they get an introduction to the dynamics of bird-migration research. Davis conducted tours of the banding station for more than 500 visitors this year. Today 15 or so park visitors gather around as Jamie Cameron and a volunteer record measurements on the latest catch from the nets. Davis answers questions and explains that banding does more than mark birds so we can find out where they spend their winters.

"We already know generally where the birds go, but we don't know much about the kind of habitat they require along the way," he says. "Banding helps us determine what type of forests they need for resting and refueling. There aren't many stretches of continuous forest like this along the East Coast for them to regain their strength. Also, by

BIRDING INFORMATION

Contact Kiptopeke State Park for information about birding, canoeing, and other outdoor activities at 3540 Kiptopeke Drive, Cape Charles, Virginia 23310; or call (757) 331–2267. Contact the Eastern Shore of Virginia National Wildlife Refuge at 5003 Hallet Circle, Cape Charles, Virginia 23310; or call (757) 331–2760. To join KESTREL ($10 for individuals) and receive its newsletter with a calendar of events and results of the hawk census, write to KESTREL, Box 111, Franktown, Virginia 23354. Visit the organization's web site at <www.baylink.org/kestrel>.

For information about the Fall Birding Festival each October, contact the Eastern Shore Chamber of Commerce, P.O. Box 460, Melfa, Virginia 23410; or call (757) 787–2460. Eastern Shore Escapes offers weekend bed, breakfast, and birding packages in September and October that include lodging, lectures, and guided bird walks. Call (888) VASHORE.

Public education is a major focus of KESTREL. Visitors have a unique opportunity to watch and take part in bird banding. Above, KESTREL education coordinator Andy Davis provides a songbird banding demonstration at Kiptopeke State Park.

GEORGE O. MILLER

comparing the numbers banded each year, we can look for changes in the populations of each species."

Davis takes a White-throated Sparrow that's ready for release and lets several young people touch it. Then he shows a teenage girl how to hold it for release. Nervously taking the tiny bird in her grip, she opens her hand, and then squeals and jumps in surprise as it springs into the air.

"Teaching young people about wildlife and the environment is one of the most important aspects of the fall program," says Davis.

After the songbird banding station closes in the afternoon, we gather back on the hawk-watch platform, where Marshall Iliff has been stationed all day. "We had 45 red-tails in the last hour, the best day for them so far," he tells us.

Like the birds passing through on their way south, people visit the platform for a few hours and leave, but not without having gained a new appreciation of the birds soaring overhead and the arduous journey ahead of them. A couple from Texas says their good-byes and leaves the platform.

"Check out my bumper sticker on your way out," Jamie, a Boston resident, tells them. They laugh when they read the "Don't Mess with Texas" slogan. "It sure beats 'Virginia is for Lovers,'" he yells after them. The easy camaraderie of the KESTREL team belies the dedication and perseverance required to maintain a daily, dawn-to-dusk program for three months.

The evening sun casts long shadows across the platform as we chat and eye the sky. Iliff and Tabor study a kettle of circling vultures. The birds float across the white streak of a jet contrail lining the brilliant blue sky. "I see 11 Turkey Vultures and four buteos—all red-tails," says Iliff.

A visitor comments that this is MCI birding—long-distance bird watching. Just then, a bird lands on the railing a few yards away, and we raise our binoculars in unison. "Palm Warbler," says Tabor.

The white bellies of swooping Tree Swallows flash in the sun, and chickadees chatter in the shrubs. A light breeze ruffles the leaves of trees rich in autumn hues. Iliff hurries to the end of the platform and sets up his spotting scope. "Golden Eagle over the pines," he calls. We scan the horizon to see the dot that triggered his curiosity. "That's the bird of the day," he says.

Since the first volunteers put up their mist nets 35 years ago, Kiptopeke birders have banded nearly a quarter of a million birds. And this season, the 500,000th hawk was counted. But KESTREL is not content with these outstanding figures. Last year, staff members planted a butterfly garden in the park and began a monarch butterfly banding program. They also monitor the spring songbird migration. In 1998, volunteers counted 50,000 birds between mid-March and mid-May. If the organization can raise sufficient funds, it will start a spring banding program. With its cadre of dedicated birders, KESTREL has made Kiptopeke State Park and the eastern shore of Virginia one of the major birding locations and research stations on the East Coast. ■

George Oxford Miller is a freelance writer who lives near Cape May, New Jersey.

Birders have always relied on field marks.

RED DOTS

tend to be the favorite.

Red Dots are being spotted with increasing frequency. Why? Look past the specs and technical jargon. Experience Leica's legendary edge-to-edge clarity, contrast and brightness. The rugged construction. Built upon 150 years of excellence, Leica birding optics include binoculars focusing as close as 8 1/2 ft. Look for Red Dots at dealers everywhere. For one near you call toll-free or visit our website. Leica. The Optical Advantage.

LEICA

1-800-222-0118 www.leica-camera.com/usa ©1999 Leica Camera Inc.

Birding with the Corps of Discovery

The unsung scientific accomplishments of Meriwether Lewis

April 7th, 1805. Our vessels consisted of six small canoes, and two large perogues. This little fleet, altho' not quite so rispectable as those of Columbus or Capt. Cook, were still viewed by us with as much pleasure as those deservedly famed adventurers ever beheld theirs. . .

We were now about to penetrate a country at least two thousand miles in width, on which the foot of civilized man had never trodden; the good or evil it had in store for us was for experiment yet to determine. . . [yet] entertaining as I do, the most confident hope of succeeding in a voyage which had formed a da[r]ling project of mine for the last ten years, I could but esteem this moment of my departure as among the most happy of my life.

—*Meriwether Lewis*

By Kristi G. Streiffert

Meriwether Lewis is underappreciated. Sure, his footsteps are followed by thousands, annual festivals are held in his honor, and many more are being planned as the bicentennial of his accomplishment approaches in 2004. But most see Lewis as a brave explorer and are unaware of his great contributions to the study of natural history. Fact is, he ventured much farther west than John James Audubon and did his exploring 40 years earlier. Meriwether Lewis (with William Clark in a significant supporting role) discovered at least 25 birds that were new to science (and many more than that if you're counting subspecies). Lewis also described more than 100 other animals and almost 200 new plant species on his journey from St. Louis to the Pacific Ocean and back.

Lewis's accomplishments in this field receive little attention because the Corps of Discovery's other deeds—indeed, the very fact of their survival—are so overwhelming. In addition, Lewis's scientific records were neglected for many years after his return to the United States and subsequent death, reportedly by suicide.

The primary objective of the expedition, as commissioned by Thomas Jefferson, was to explore the Missouri and other western rivers in the hope of finding "the most direct and practicable water communication across the continent for purposes of commerce." Commerce may have been the official justification, but scientific curiosity was, undeniably, a strong motivating factor behind the journey. President Jefferson was an avid student of natural science and once called the pursuit of nature and scientific study his supreme delight. With the goal of vicariously pursuing this study, Jefferson personally sponsored Lewis's education as a naturalist and then directed him "to observe the animals of the country generally, and especially those not known in the U.S."

Lewis already had a naturalist's eye, as we shall see. He began developing observation skills during his childhood, which he spent exploring the woods of Albemarle County, Virginia. Jefferson wrote that Lewis's "talent for observation . . . led him to an accurate knowledge of the plants and animals of his own country." Lewis's mother was a renowned herb doctor, and this family knowledge of the principles of botany contributed to his boyhood store of natural history information. His early training is evident in his comparisons of eastern and western flora and fauna. When describing the Blue Grouse, he reported that the grouse had the same number of tail feathers as the eastern Ruffed Grouse—18. In another example, he compared the color of the fins on the backs of cutthroat trout with trout he had caught as a child in Virginia—red or gold, instead of black.

Lewis's training in the sciences was completed during the two years he spent in the White House as secretary to President Jefferson. It was probably here that he learned how to prepare a bird skin according to Jefferson's instructions: "Make a small incision between the legs of the bird and remove the entrails and eyes . . . fill the bird with a composition of 2/3 common salt and 1/3 nitre pounded in a mortar with two tablespoons of black or Indian pepper. . . ." He met and spent time with some of the natural history experts of his day and heard them speculate on what might lie in the uncharted lands beyond the Mississippi River.

As a matter of fact, the explorers were not very far beyond the Mississippi River when they began gathering data new to science. On the day the expedition first saw the Kansas River, Clark mentioned that he had encountered large numbers of the now-extinct Carolina Parakeet. This bright green bird with a yellow head had never been seen west of the Mississippi, so this observation expanded its known range.

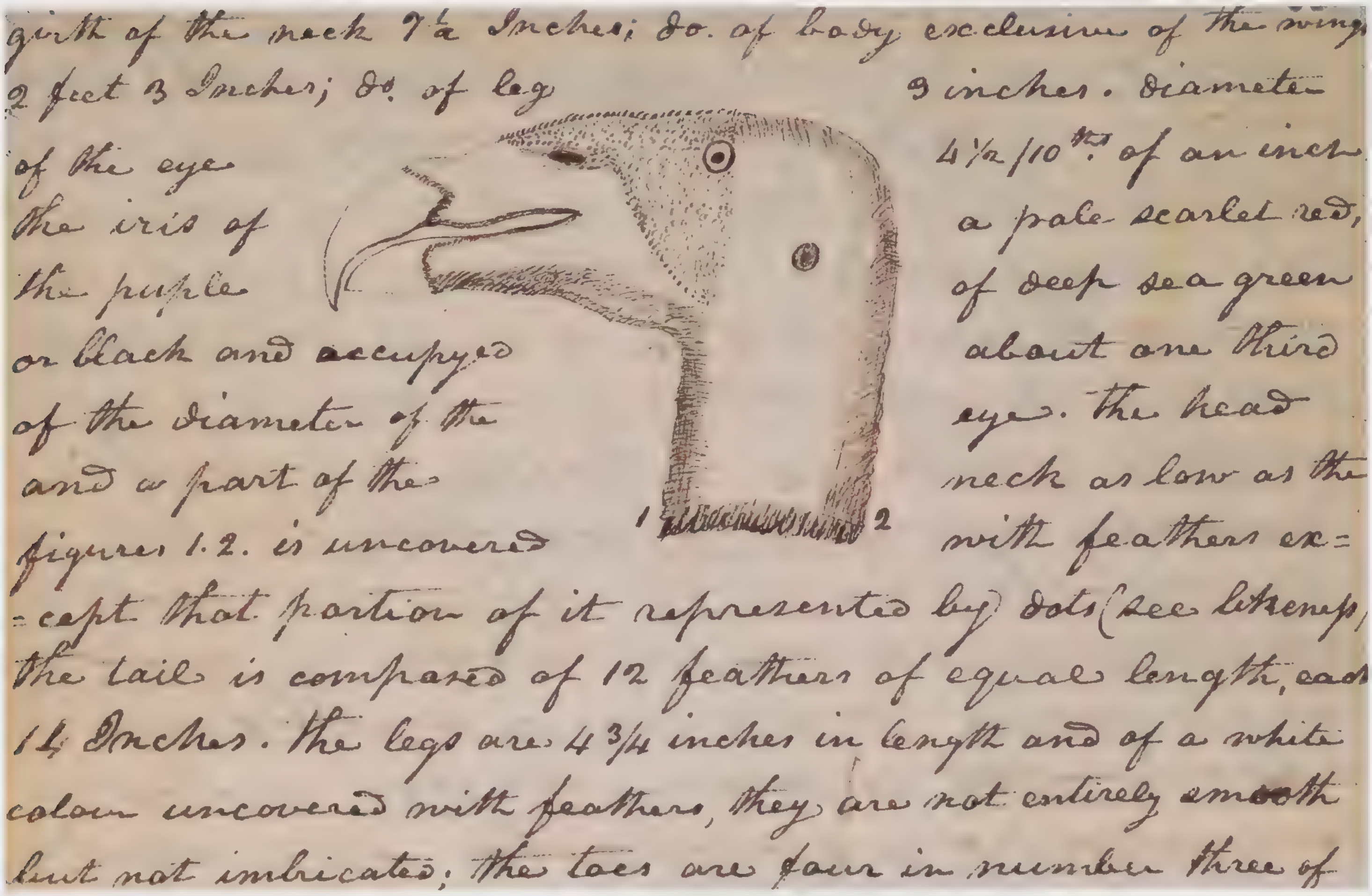
The Corps was in North Dakota when they discovered their first new bird. Lewis distinguished it from the similar prairie-chicken by noting its pointed tail: "the feathers in its center much longer than those on the sides."

The previously unknown plants and animals described by Meriwether Lewis (above) and William Clark numbered in the dozens. And yet, many of these discoveries went unacknowledged for more than a century. Alexander Wilson painted the Lewis's Woodpecker (Melanerpes lewis)*, at left, from specimens personally collected by Lewis. "It was the request, and particular wish, of Captain Lewis, made to me in person, that I should make drawings of such of the feathered tribes as had been preserved, and were new," wrote Wilson. "That brave soldier, that amiable and excellent man, over whose solitary grave in the wilderness I have since shed tears of affliction, having been cut off in the prime of his life, I hope I shall be pardoned for consecrating this humble note to his memory, until a more able pen shall do better justice to the subject."*

LEFT: ALEXANDER WILSON/CORNELL RARE AND MANUSCRIPT COLLECTIONS. RIGHT: CHARLES WILSON PEALE/INDEPENDENCE NATIONAL HISTORICAL PARK LIBRARY

The bird was the Sharp-tailed Grouse, and Lewis also discovered at least two of the several distinct subspecies of this grouse.

Another North Dakota find was the Black-billed Magpie, which Lewis described as having a "remarkably long tail, beautifully variegated. Its note is not disagreeable, though loud—it is *twait-twait, twait; twait, twait twait twait* . . . its head, neck, breast and back within one inch of the tail are of a fine glossy black . . . the belly is of a beautiful white . . . the plumage of the tail consists of 12 feathers of equal length by pairs." Although this bird was common in Europe, no one knew until then that its range included western North America.



girth of the neck 7½ Inches; do. of body exclusive of the wings
2 feet 3 Inches; do. of leg 3 inches. diameter
of the eye 4½/10ths. of an inch
the iris of a pale scarlet red,
the puple of deep sea green
or black and accupyed about one third
of the diameter of the eye. the head
and a part of the neck as low as the
figures 1.2. is uncovered with feathers ex=
=cept that portion of it represented by dots (see likeness,
the tail is composed of 12 feathers of equal length, each
14 Inches. the legs are 4¾ inches in length and of a white
colour uncovered with feathers, they are not entirely smooth
but not imbricated; the toes are four in number three of

In his journal, Meriwether Lewis wrote copious notes describing the many species of plants and animals discovered on the expedition. He also sometimes drew detailed sketches, such as the California Condor head (above).

Later that fall, as the weather grew colder, Lewis found a bird whose discovery was credited to John James Audubon for nearly a century. And he made an observation about its life history that was not validated until almost 150 years later. The bird was the Common Poor-will (referred to in most early references as "Nuttal's Poor-will"), and he noted that it appeared to be passing "into the dormant state. . . . I run my penknife into its body under the wing and completely destroyed its lungs and heart, yet it lived upward of two hours. . . ." Did he hold the bird in his hand, watching, for the entire two hours? Though science had long recognized hibernation among mammals, torpidity among birds was not accepted until the publication of "Further observations on the hibernation of the Poor-will" by E.C. Jaeger in *The Condor* in 1949.

Lewis's discovery of the Common Poor-will as a species was not known until the *Original Journals of the Lewis and Clark Expedition* (Reuben G. Thwaites) were published a century later. When John James Audubon ascended the Missouri in 1843 and found a poor-will, he received credit for the discovery, because his was the first published description of the species.

This is just one example of the many discoveries made by the expedition that did not come to light soon enough for Lewis and Clark to receive credit. We know that Lewis had every intention of writing a full account of the expedition, but on his return, his new position as governor of Louisiana distracted him and slowed his progress. Then, his sudden death in 1809 brought all work toward publishing the journals to a halt. Nicholas Biddle, a lawyer with no scientific background, published a much abbreviated edition of the journals (leaving out most of the significant zoological and botanical information) in 1814. The expedition received little recognition for its scientific achievements until Elliott Coues, a respected ornithologist, produced an annotated edition of the Biddle narrative in 1893.

Even with the publication of the Coues edition of the journals, the full scope of the expedition's natural history contributions was not well documented until 1969, when *Lewis and Clark: Pioneering Naturalists* by scholar Paul Russell Cutright was published.

Lewis continued to make astounding observations as the expedition pushed west. According to Ken Walcheck, who edited a forthcoming publication about the expedition's bird observations, Lewis recorded nearly 54 species of birds in Montana. Walcheck studied Lewis's observations of nesting Canada Geese along the river and found his notes to be ornithologically significant. Walcheck asserts that Lewis documented one of the smaller races of migratory geese that passes through Canada: the Lesser Canada Goose. Other Montana discoveries included Sage and Blue grouse, Long-billed Curlew, Lewis's Woodpecker, Pinyon Jay, and Western Meadowlark. Lewis was one of the earliest observers to record "adaptations" or behaviors birds use to cope with their physical

AMERICAN PHILOSOPHICAL SOCIETY

LEWIS AND CLARK EXPEDITION BIRD LIST

Scholar Paul Russell Cutright was one of the few researchers to appreciate Meriwether Lewis's contributions to science (*Lewis & Clark: Pioneering Naturalists*). In determining whether to list a bird as a new discovery, Cutright used the observations of earlier ornithologists like Elliot Coues and clues from the expedition's journals. This is more difficult than it sounds, since many of the journal entries are rather sparse. For example, consider the entry dated July 22, 1805: "We . . . saw a species of small curlooe or plover of a brown colour . . . it is a different kind from any heretofore described and is about the size of the yellow leged plover or jack Curloo." From these notes and only a few other indications, scholars conclude that the bird mentioned is probably the Mountain Plover.

"Many of those who have analyzed the journals have been a bit too liberal with assigning new discoveries to Lewis and Clark," says Ken Walcheck. "There is often not enough evidence to feel comfortable with an identification." But searching out the birds of Lewis and Clark, disputed as discoveries or not, can be a rewarding trek. What follows is an edited and updated version of Cutright's Lewis and Clark Expedition bird-discovery list, using the 1998 American Ornithologists' Union checklist. A few of the subspecies have been left out. This list is arranged geographically; the original was arranged alphabetically.

Oregon

Pacific Loon
Western Grebe
Red-necked Grebe
Tundra Swan
Greater White-fronted Goose
Lesser Canada Goose (Canada Goose)
Ring-necked Duck
Bonaparte's Gull
Western Gull
Glaucous-winged Gull
Pacific Fulmar (Northern Fulmar)
Western Pileated Woodpecker
  (Pileated Woodpecker)
Western Crow (American Crow)
Northwestern Crow
American Raven (Common Raven)
Western Winter Wren (Winter Wren)

Along the Columbia River—Eastern Washington and Oregon

Double-crested Cormorant
Columbian Sharp-tailed Grouse
Mountain Quail

Idaho

Oregon Ruffed Grouse
Franklin's Spruce Grouse
Dusky Horned Owl (Great Horned Owl)
Broad-tailed Hummingbird
Black-headed Jay (Steller's Jay)
Western Tanager
Clark's Nutcracker

Montana

Richardson's Blue Grouse
Lewis's Woodpecker
Hutchins's Goose (Canada Goose)
Western Willet (Willet)
Sage Grouse
Pacific Nighthawk (Common Nighthawk)
Pinyon Jay
McCown's Longspur
Long-billed Curlew
Western Meadowlark
Brewer's Blackbird

North Dakota

Forster's Tern
Montana Horned Owl
  (Great Horned Owl)
Northern Flicker
Prairie Horned Lark
  (Horned Lark)
Common Poor-will

Iowa

Least Tern

South Dakota

Black-billed Magpie

Lewis posed for this portrait in Washington, D.C., not long after his return from the wilderness. The cape he wears, called a tippet, made of otter fur and dozens of white weasel pelts, was given to him by Cameahwait, a Shoshone chief, during his stay with the tribe. The tippet, wrote Lewis, is "the most elegant piece of Indian dress I ever saw."

CHARLES B.J.F. DE SAINT-MEMIN/COLLECTION OF THE NEW-YORK HISTORICAL SOCIETY

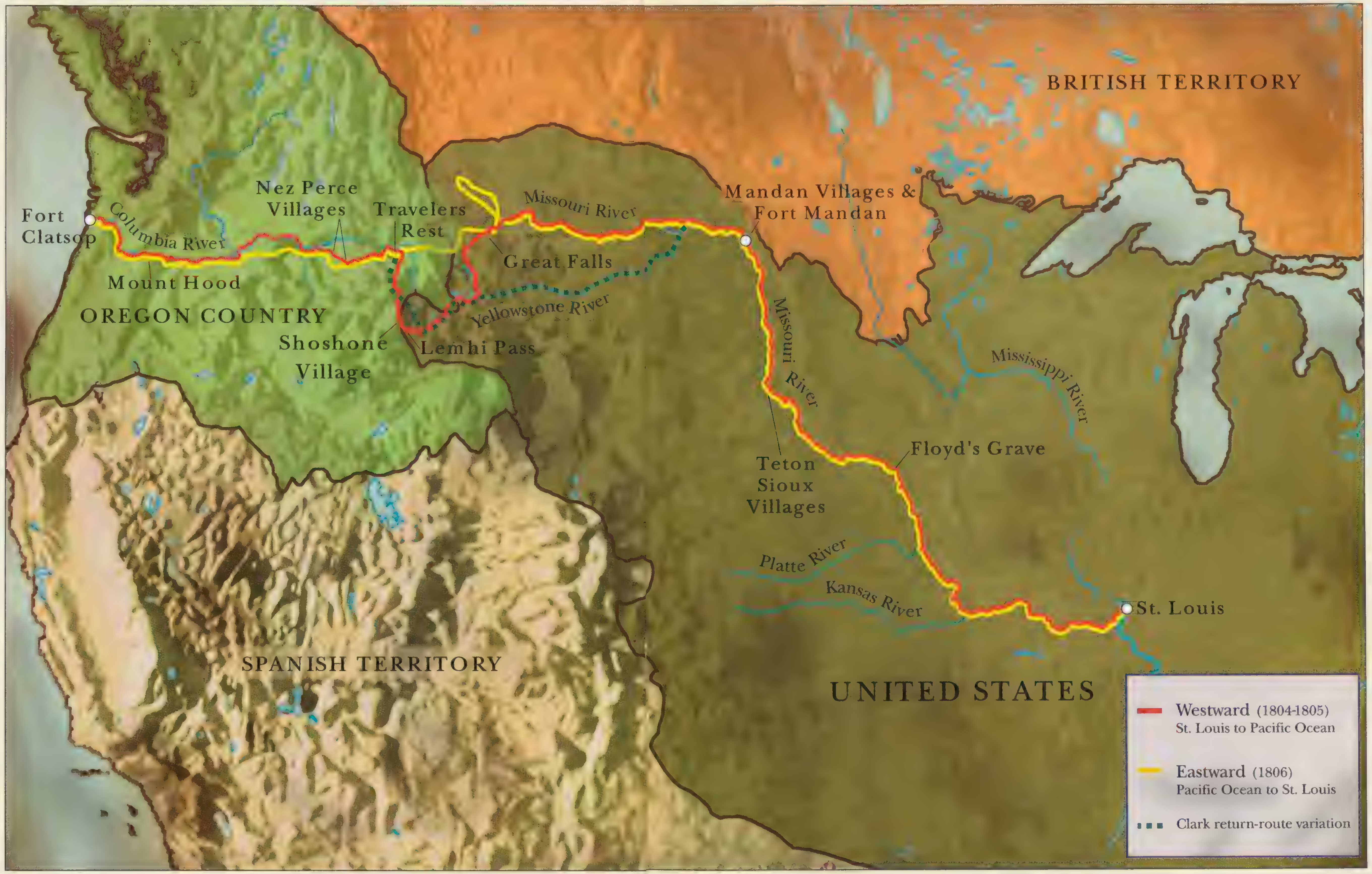
FOLLOWING IN THE FOOTSTEPS OF LEWIS AND CLARK

Today more than 80 sites exist on the Lewis and Clark National Historic Trail, and all are visited by both casual tourists and diehard Corps of Discovery fans. Birders who visit these sites will probably be the only ones scanning the cottonwoods for warblers. Everyone else will be busy reading interpretive signs about the famed expedition. It can be a stimulating challenge, however, to attempt to imitate Lewis and look for birds that he might have seen when he passed through these regions nearly 200 years ago. I've looked for Sharp-tailed Grouse near Missouri Headwaters State Park in Montana, where the expedition arrived on July 27, 1805. I've scanned wetlands in coastal Oregon, looking for White-fronted Geese. I've listened for Steller's Jays on Lolo Pass in Idaho, where the Corps of Discovery almost faced defeat in the rugged Bitterroot Mountains.

Sometimes I've immersed myself in the territory and imagined what it would be like to be Meriwether Lewis, doggedly pressing on into the interior of an unknown land, observing, among other things, birds unknown to science—without the benefit of binoculars. At what is now a guest ranch on Horse Prairie in Montana, at a newly discovered Lewis and Clark campsite, I hiked out into a meadow, purposefully leaving my binoculars at the lodge. As I sat down next to some bushy willows, I heard a mixed flock of chickadees and kinglets chittering and lisping nearby. I made a gentle “pishing” sound and was immediately mobbed by curious birds. I challenged myself to look at each bird as if I were Lewis. What would I record? What behavior would seem most noteworthy to me? How would I describe the flight patterns, colors, and shapes of these birds?

One of the most intriguing and easy-to-find birds discovered by Lewis is also the bird named in his honor. The Lewis's Woodpecker was discovered on July 20, 1805, near present-day Helena, Montana. “I saw a black woodpecker today . . . about the size of the lark woodpecker and black as a crow,” he wrote. “It has a long tail and flies a good deal like a jay bird.” He described it more fully after collecting a specimen the following year. He reported its breast and belly as “a curious mixture of white and blood red which has the appearance of having been artificially painted or stained of that color.” He first saw the bird near Gates of the Mountains, in what is now Lewis and Clark County, Montana. A boat tour through Gates of the Mountains is the best possible introduction to the trail—after all, the stated goal was to find a water passage from St. Louis to the Pacific. At Gates of the Mountains, the mood is set by the towering cliffs of the canyon and the deep water, which clearly unsettled the Corps as they passed through here in mid-July 1805. “These cliffs rise from the water's edge on either side perpendicularly to the height of 1,200 feet . . . the towering and projecting rock in many places seem ready to tumble in on us,” wrote Lewis on July 19, 1805.

Gates of the Mountain boat tours run from Memorial Day through mid-September; the tours include both cultural and natural history information, along with an opportunity to observe the birds and mammals of the area, such as Ospreys, Bald Eagles, Peregrine Falcons, American White Pelicans, river otters, bighorn sheep, and mountain goats. The cruise lasts about two hours.



MAP BY MICHAEL DiGIORGIO

A short drive away (south from Helena, Montana, on U.S. Route 12/287) is Missouri Headwaters State Park, where their guide Sacajawea—who had joined the expedition at Fort Mandan—finally began to recognize the land around her. On July 27, 1805, the party camped at the site were she had been kidnapped by Hidastas five years earlier. Did they hear a magpie calling that evening as I did the day I visited? Did they notice the gayfeather flowers, chokecherry, skunk bush, and serviceberry as they hiked to the bluff overlooking the Gallatin River? From this vantage, they had to decide which of the “three noble streams” converging here would lead them over the Continental Divide.

Today, interpretive displays tell the story, and visitors who want to immerse themselves in this beautiful location can camp nearby. Heading west with the adventurers, toward the ultimate destination of the Pacific Ocean, birders can encounter many more species discovered by Lewis. They also can get a feel for some of the travails faced by the expedition, especially those of Lolo Pass, west of Missoula, Montana. William Clark recorded his discouragement on September 15, 1805: “We proceeded on up the mountain steep and rugged as usual, more timber near the top, when we arrived at the top. As we Conceived, we could find no water and concluded to Camp and make use of the snow we found on the top to cook the remains. Of our Colt and make our Supe. Evening very cold and cloudy. Two of our horses gave out, pore and too much hurt to proceed on and left in the rear. Nothing killed to day except 2 Phests. From this mountain I could observe high ruged mountains in every direction as far as I could see.”

An interpretive display at the Lolo Pass Visitor Center on U.S. Route 12 details the crossing. Lewis discovered the Franklin's Spruce Grouse on the Lolo Trail on September 20, 1805.

One of the most rewarding sites for birders on the Lewis and Clark Trail is also one of the most poignant. The Corps spent a miserable West Coast winter at Fort Clatsop, near Astoria, Oregon. Of the 106 days spent at Fort Clatsop, it rained all but 12. Clothing rotted and fleas infested the furs and hides of their bedding. Food was scarce, and the Corps of Discovery's trading supplies had dwindled. So anxious were they to leave, they began their return trip weeks earlier than necessary—the snow had not yet begun to melt on the passes they would have to cross to return to the United States.

For birders, the waterways and marshes near Astoria offer ample opportunity to see species first noted by Lewis in this same area. Western Grebes he described as “not more than half the size of the speckled loon.” In his 1893 publication, ornithologist Elliot Coues notes: “This is the original . . . description of the bird.” Coues also believed, from sparse clues in the journals, that Lewis and Clark discovered Glaucous-winged and Western gulls. These are often easily found in the waterways of the area. A more clearly documented discovery, the White-fronted Goose, can be seen near the entrance to Fort Clatsop or at Brownsmead (15 miles east of Astoria, Oregon). It is here, and at many other locations on the trail, that history and birding converge.

— *Kristi G. Streiffert*

BHL

Blank Page Digitally Inserted

In this painting by Charles M. Russell, the Shoshones meet the Corps of Discovery—the first white men they'd ever seen. Lewis (center) is hugged by a Shoshone. The Shoshones "embraced me very affectionately in their way," wrote Lewis, draping one arm over his shoulder and pressing their left cheek to his. "Bothe parties now advanced and we wer carresed and besmeared with their grease and paint, till I was heartily tired of the national hug."

CHARLES M. RUSSELL/IDAHO FOREST INDUSTRIES, COEUR D'ALENE

surroundings. His notes on the Lewis's Woodpecker are a good example. He describes this "black woodpecker" using its pointed tail to "assist it in setting with more ease of retaining its resting position against the perpendicular side of a tree."

As you would expect, Lewis recorded more observations, in more detail, when conditions were favorable for writing. For example, along the Missouri River above Pablo Island, he wrote of the exhausting efforts required to make progress. The men's labor (in slippery mud and water up to their armpits) is "incredibly painful and great," he said. Along this stretch of the river, Lewis recorded that he saw a woodpecker and a Cliff Swallow. In contrast, over the long, uncomfortable, and boring months at their winter quarters in Oregon, Lewis filled entire notebooks with data. He detailed his knowledge of 56 species of birds. He wrote about the foods used by Sage Grouse, about the "delicious taste" of the Canvasback, and about the nesting habits of the American White Pelican. He wrote that on March 15 the birds were singing very agreeably.

On his return trip to St. Louis, Lewis continued to discover new species of birds, including the Western Tanager and Broad-billed Hummingbird. But the history of the expedition didn't end there. What happened to the specimens collected by Lewis and Clark? Can we view any of the birds they brought back? Unfortunately, few artifacts from the Lewis and Clark expedition remain. Congress refused to fund a nationally endowed museum for the artifacts, despite the determined pleas of artist Charles Wilson Peale, who had meticulously tried to care for the specimens. He made a final effort in 1819, fearing that "some fatal stroke may scatter the precious deposits." The U.S. Congress, however, regarded Washington, D.C., as too small a town to support a museum.

Peale's worst fears were realized. The few specimens that made it back to the United States with the expedition changed hands several times, were exhibited, placed in storage, and then re-exhibited in a museum that later burned down. One bird skin may still exist, but its pedigree is not completely without doubt. At the Museum of Comparative Zoology at Harvard University resides what Paul Russell Cutright called a "venerable looking specimen" of a Lewis's Woodpecker, thought to be the type specimen collected by Lewis. Either that, or it could be one of two shot by T. R. Peale on the Long expedition. Most people prefer to think of it as the former. ■

Kristi G. Streiffert is a freelance writer based in Coulee Dam, Washington, and a frequent contributor to this magazine.

TRIP INFORMATION

Gates of the Mountain Tours: 18 miles north of Helena, off Interstate 15. Telephone: (406)458–5241. Fares: adults $8.50; children 4-17 $5.50.

Missouri Headwaters State Park information: Travel Montana; phone: (800)VISIT–MT.

Horse Prairie Ranch (a guest ranch near Lemhi Pass, on the site of a Lewis and Clark camp); phone: (888) RANCHLIFE.

Fort Clatsop National Memorial, Astoria, Oregon. Open daily. Phone: (503) 861–2471.

FURTHER READING

Ambrose, Stephen E. 1996. *Undaunted Courage: Meriwether Lewis, Thomas Jefferson, and the Opening of the American West.* (New York: Simon & Schuster.)

Cutright, Paul Russell. 1969. *Lewis and Clark: Pioneering Naturalists.* (Urbana: University of Illinois Press.)

Burroughs, Raymond Darwin. 1961. *The Natural History of the Lewis and Clark Expedition.* (East Lansing: Michigan State University.)

Special Offer!

The Birds of North America

A limited number of charter subscriptions to *The Birds of North America* are still available to members of the Cornell Lab of Ornithology (see *Living Bird*, Spring 1998). While the offer lasts, Lab members can purchase the entire 18-volume set (all 720 species accounts) for the remarkably low price of $1,875, a savings of $375 off the current individual charter price.

Don't miss this special opportunity. For more information, contact Pat Warner, The Birds of North America, 1900 Benjamin Franklin Parkway, Philadelphia, PA 19103; (215) 567-1170; e-mail: warner@birdsofna.org; web site: http://www.birdsofna.org.

The Birds of North America, No. 10, 1992

DAVID F. PARMELEE

Nyctea scandiaca

Snowy Owl

The Birds of North America

Life Histories for the 21st Century

Figure 1.

Order STRIGIFORMES Family STRIGIDAE

Going Birding?

Be sure you have the books, optics, and birding gear that will make your trip a success. ***The Birder's Catalog*** is a goldmine of birding products and resources.

Call for a free Birder's Catalog today!

ABA Sales

Specializing in books, optics, and accessories for birders.

PO Box 6599, Colorado Springs, CO 80934
Phone: 800/533-2473
Website: www.americanbirding.org/adcornell.htm

SPOTTED OWLS *and* FIGHTER JETS

TEXT AND PHOTOGRAPHS BY BETH DAVIDOW

Can these threatened birds exist side by side with F-16 fighter jets?

The canyon was quiet on this cool morning in the mountains of southern Colorado. The rustle of a slight breeze whispering through the pine needles was the only sound we heard until Charlie Johnson's radio crackled to life. "Get ready," Major Mike Waggert's voice blared out, "the jet is five minutes away."

We turned our attention to the Mexican Spotted Owl (*Strix occidentalis lucida*) sitting on a branch in a nearby tree. The bird's eyes were closed as it snoozed in the early morning shadows. Suddenly, the F-16 streaked into view overhead, roaring low over the treetops 1,500 feet above the canyon rim. Would the approaching jet scare the owl and cause it to flush? We would soon know.

The Mexican Spotted Owl ranges from central Mexico through western Texas and New Mexico, north into Arizona, central Colorado, and Utah. Here, in the northeastern portion of its range, in the forests of southern Colorado, the species inhabits deep canyons with prominent rock cliffs, where tall conifers grow on canyon floors and niches in the rock walls. Ponderosa pines dominate the south-facing slopes while Douglas-firs prefer the north-facing walls.

Biologists began studying the ecology and distribution of Mexican Spotted Owls in Colorado during the spring of 1989. This was the first attempt to determine the abundance and distribution of the owls in Colorado. In the initial phase of the study, it took three years to locate enough Mexican Spotted Owls to use as a sample population in research on nest success, dispersal of young, diet, and winter and summer habits of the species.

On April 15, 1993, the Mexican Spotted Owl was listed as a threatened species by the U.S. Fish and Wildlife

Service (USFWS). The owl's new threatened status made it imperative for researchers to find out more about how human activities were affecting the birds. One important feature of the owls' habitat came to light: whenever the Air National Guard flew their F-16 fighters to or from the Fort Carson Military Reservation, south of Colorado Springs, Colorado, the planes came in low and loud, directly over the owls' remote forest home. How did these flights affect the birds? Were they flushing from their nests or roosts, potentially endangering their eggs, young, or themselves? And was the noise enough to harm further the status of this already threatened species?

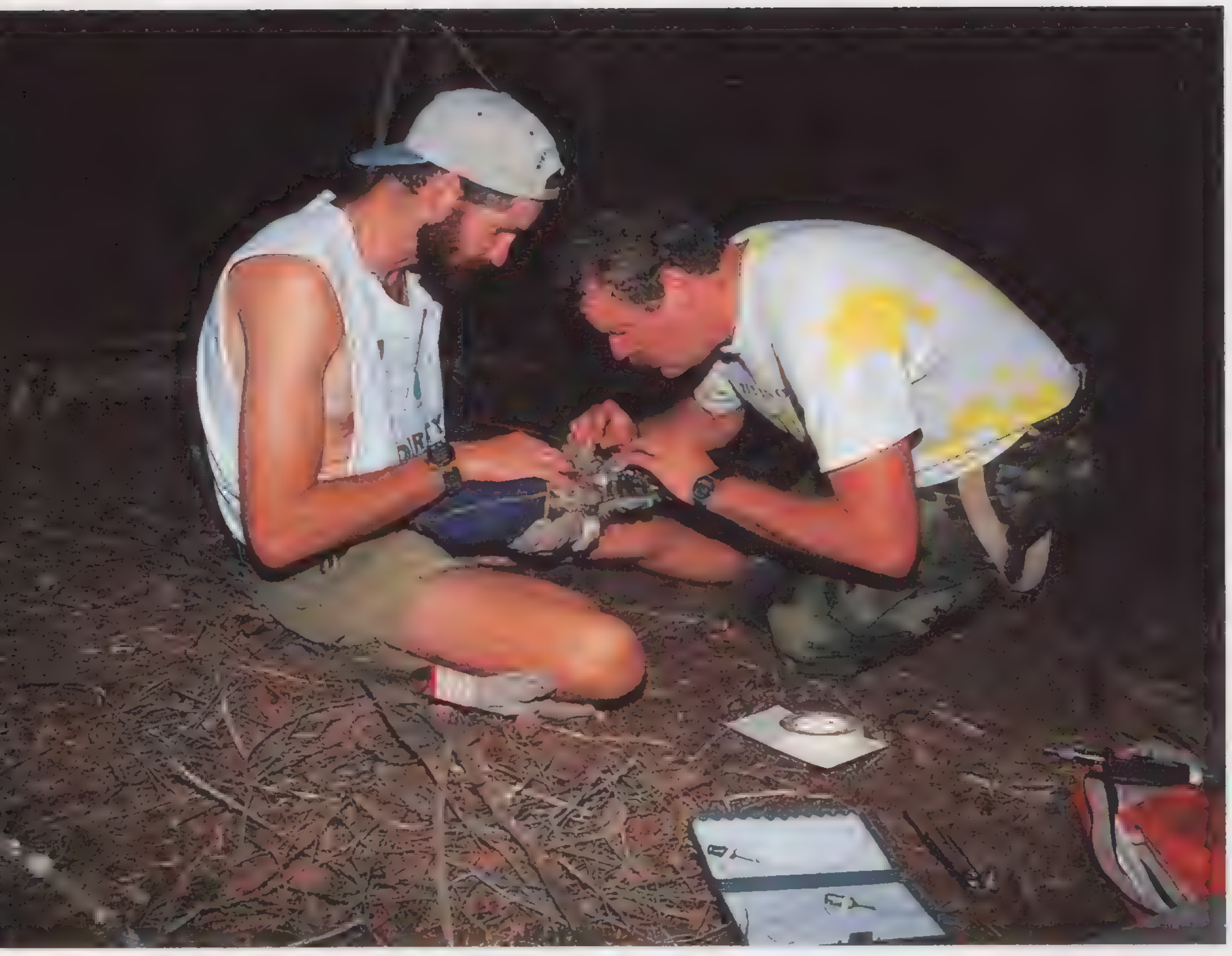
To answer these questions, the Birds of Prey Working Group—made up of Bureau of Land Management, U.S. Forest Service, U.S. Army, Air National Guard, Colorado Division of Wildlife, Colorado College, and USFWS personnel—funded a study conducted by biologist Charles Johnson to examine the situation. Johnson, of the USDA Rocky Mountain Forest and Range Experimental Station, observed owls in two military operating areas (MOAs) in southern Colorado: Le Veta MOA, south of Fort Carson, and Fremont MOA, west of Fort Carson. These two MOAs contain 71 percent of the known population of Mexican Spotted Owls in Colorado. Johnson and his team are investigating the effects of military aircraft—specifically the F-16s—on the behavior of day-roosting owls in these areas.

In Colorado, the Air National Guard flies approximately 3,294 sorties (each sortie consists of one takeoff and landing by one plane) per year over the two MOAs. To observe the effects of these overflights on the behavior of the owls, Johnson had to coordinate the overflights between the F-16 pilots in the air and the location of the biologists on the ground. The timing and location of the flights were directed by Johnson, and that information was relayed by an air guardsman to the pilots.

Before conducting an overflight, Johnson first had to go into the woods and find the owls. Once an owl was located, Johnson and the other biologists carefully caught the bird, either in a mist net or with a noose trap, then attached a small radiotelemetry transmitter to its tail. Later, on mornings when an overflight was scheduled, Johnson would use a handheld directional antenna and receiver to track down an owl. With the position of the owl known, Johnson could direct the F-16 pilot over the precise location of the roosting owl in the forested canyon.

One hot and humid summer evening with the air still and thick in the forest, I followed Charlie Johnson and his team into the woods. We scrambled over fallen logs and got our

Even in the remote canyons of southern Colorado, Mexican Spotted Owls are not free from human disturbance. At left, an F-16 blasts over at almost 600 miles per hour. Are these overflights harmful to these already threatened birds?



Biologist Charlie Johnson (at right above) and an assistant affix a tiny radiotelemetry transmitter to a Mexican Spotted Owl. This valuable tool enables researchers to locate individual birds so they can observe them when the jets fly over.

shoes wet crossing a small creek. John and Erica, two of Johnson's assistants, headed off in one direction, to check out a side canyon, while Charlie and I investigated another side canyon where tall cliffs towered above dark pines. As we walked along, we looked up into the trees, trying to spot the well-camouflaged owl. Suddenly Charlie, who was in the lead, whispered, "There it is!" He had almost walked right under the owl's perch. Leaving me alone in the quiet woods to keep an eye on the owl, Charlie went to get another team member who would assist in the bird's capture.

Johnson dug a shallow depression in the ground and placed a noose in it, along with a white mouse. We moved away from the trap and sat motionless in the woods.

Hours passed. A squirrel chattered in a tree nearby, apparently disturbed by our presence. But the owl sat silently on its perch, resting—waiting for dark, when it would hunt for deer mice, voles, and wood rats.

As darkness engulfed the canyon, the owl flew to a branch close to the trap. The bird waited, listening intently and gazing toward the ground. Its keen hearing had picked up the soft sounds of the mouse. Suddenly, like a ghost, the owl glided noiselessly down after the white mouse, but as it reached for its prey, the noose tightened on its legs. The owl was caught.

Charlie and John placed a cloth carefully over the owl's head to keep it calm, while the other men attached a tiny transmitter to its tail. When the task was completed, they immediately released the owl. Their day's work finished, the biologists led the way out of the dark canyon. It was almost midnight.

Three o'clock in the morning came all too soon. Hours before the sun rose over the lofty cliffs, we were again walking through the eerie canyon in darkness. Although we were tired from too little sleep, we were excited. The air felt cool and brisk, and a faint breeze stirred the pine needles. This time, we knew right where to find the owl, in the canyon where we had captured it just a few hours earlier.

Major Mike Waggert from the Air National Guard was with us. His job was to coordinate the flight of the F-16 using a Global Positioning System (GPS). Waggert would stay in radio contact with the pilots before, during, and after the three overflights, directing them right over us each time.

The overflights would take place one right after the other, at increasing speeds. Sound duration and noise level, determined by using a Larson-Davis 820 sound recorder, were the two variables the researchers would examine during the overflights. The faster the jets fly, the louder the noise and the longer it echoes in the canyon. The first flight would travel at "en route cruise" speed, about 340 miles per hour, with the noise lasting about 15.5 seconds. Ten minutes later, the second flight would come in at "second power setting," 480 miles per hour, with the noise lasting about 19 seconds. Finally, the third flight would go over at "higher-power setting" speed, 590 miles per hour, with the noise reverberating for about 22.5 seconds. During all three flights, the F-16 would maintain an altitude of approximately 1,500 feet above the canyon rim.

We finally reached the spot where we'd last seen the owl the night before. The sun brightened the canyon at 5:00 A.M., and the owls began to hoot. Following the sounds, we found the birds just uphill from where we had trapped the owl. On this morning, the male and female were together. After flying around for a few minutes, the owls came to roost in a tree against the canyon wall. We kept our sleepy eyes on the pair until 7:00 A.M., when Charlie let me take a few pictures of them. I used a 500mm telephoto lens with a teleconverter, so that I could get close-up pictures while remaining at a reasonable distance from the birds. The owls stayed calmly perched in their tree, barely noting my presence.

When word came from Major Waggert that he was ready to call in the F-16, Johnson asked me to flush one owl from its perch. He wanted the birds to be apart during the overflights so they would not be able to take comfort from each other's presence. It took some effort to get one of the Spotted Owls to fly; they are typically very calm birds. The male eventually flew to another tree—unfortunately, out of our area. Two observers, watching the bird with spotting scopes, recorded the behavior of the remaining owl, before, during, and after the overflights.

We got into a position where we could keep our eyes on the female owl. From the top of the canyon rim, Waggert directed the F-16 to our location. By radio, he told us the jet was on its way. We waited, watching the owl, which stayed perched, snoozing in the cool morning air. Suddenly, the air thundered as the F-16 sped past overhead. We kept our eyes locked on the owl as the jet roared above us. What would she do? We soon found out. Opening her dark brown eyes, she moved her head slowly, glancing skyward for a moment—and then, with a ruffle of her speckled feathers, she went right back to sleep. On the next two overflights, when the jet flew faster and louder over the canyon, she didn't even wake up.

Later, we hiked into another canyon and observed the behavior of two more owls as the fighter jet streaked past overhead. Again, these owls hardly responded. After one quick look up, the owls would usually go right back to sleep. In other observations of owls during overflights, the bird's responses were similar. Usually an owl reacted with a slow head turn toward the aircraft—a "low response." The owls responded in the same way to natural sounds heard in the forest. A few times, however, owls made an "intermediate response"—turning their heads more quickly toward the sound—as they heard an F-16. Thunder and mobbing birds created the same apparent level of response. None of the owls exhibited a "high response," flushing or showing obvious signs of distress. According to this preliminary data, the Mexican Spotted Owls in the study area do not appear to be significantly bothered by the noise of the jet aircraft.

Studying the impact of aircraft noise on Mexican Spotted Owls is just one of many projects funded by the Air National Guard Environmental Division. "The National Guard is entrusted with the ethical care of air, land, and water resources," says Dick Masse, program manager of the Environmental Division. "To that end, the Guard's national resources mission is to ensure that its personnel are able to train to meet their peace and wartime requirements while safeguarding the nation's natural assets. Some of the ways that we are doing that are projects like regrowing trees on old bombing ranges in New Jersey, protecting endangered sandpipers where they nest between the runways in New Hampshire, and reestablishing Wild Turkeys in Wisconsin."

In all 50 states, as well as in Guam, Puerto Rico, the Virgin Islands, and American Samoa, this division provides environmental support and expertise for the local Air National Guard units.

In this way, the Air National Guard fulfills its mandate to protect the country as well as its wild inhabitants, such as the Mexican Spotted Owl. ■

A pair of Mexican Spotted Owls sits peacefully before an F-16 flies over them. How will the birds respond to this intrusion into their air space? That's what this research project, funded by the Air National Guard Environmental Division, aims to find out.

Beth Davidow is a freelance writer and photographer based in Bozeman, Montana.

BINOCULARS AND SPOTTING SCOPES

EAGLE OPTICS *RANGERS* - BINOCULARS FOR BIRDERS

Our Exclusive
Phase-Corrected
***Ranger* Binoculars**
are now Available!

Waterproof/Fogproof
Rubber Armored
Exceptionally Lightweight
Fully Multi-coated Lenses
Extremely Close Focusing
Long Eye Relief
Lifetime Warranty
Everything
you've always wanted
in a premium binocular
for less!

Authorized U.S. Dealer for:
Leica, Swarovski, Zeiss, Swift, Nikon, Celestron, Bausch & Lomb, Kowa, Questar, Tele Vue, Pentax, Canon, Meade, Steiner, Leupold, Bushnell, Minox, Burris, Fujinon, Eagle Optics, Bogen, Velbon, Brunton, Mirador

Get the best information, advice *and* value from Birders who know: Birds, Birders, Birding and Birding Equipment. We've built a nation-wide reputation on offering birders the best in selection, service and prices on quality optic products. Let our courteous and knowledgeable sales staff gladly assist you in selecting from our complete and extensive inventory.

Call for your FREE Comprehensive Optic Buying Guide & Discount Price List on optics from all major manufacturers

Eagle Optics

☎ (800) 289-1132

2120 W. Greenview Dr. #4
Middleton, WI 53562
608-836-7172
fax: (608) 836-4416
earnest1@eagleoptics.com

www.eagleoptics.com

Birding Optics
•
Field Apparel
•
Essentials

www.upstart-crow.com

The Sapsucker Woods Society

GREAT EGRETS BY CLIFF BEITTEL

You can turn a simple plan for your future into an investment for the birds. A planned gift in the form of a bequest or life income agreement is an ideal way to plan for your future, to retain real benefits for yourself, and to enhance the Lab of Ornithology's efforts in bird research and conservation. Lab friends who take advantage of this special investment opportunity will become charter members of the exclusive Sapsucker Woods Society.

For more details, contact Scott Sutcliffe, associate director, Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Phone: (607) 254-2424; e-mail: sas10@cornell.edu.

Cornell Lab of Ornithology
Visit our web site at http://birds.cornell.edu

THE AMERICAN BIRDING ASSOCIATION

PO Box 6599
Colorado Springs, CO 80934
phone: 800/850-2473 or fax: 719/578-1480
E-mail: member@aba.org
Web Site: www.americanbirding.org

Join the American Birding Association — the only North American association for field birders. Get involved with bird education, conservation projects and

- Stay in touch with the latest issues in birding through **Birding** magazine and **Winging It** newsletter.
- Find all of the books, optics, and accessories you need in **The Birder's Catalog**.
- Make contact with local birders as you travel using our **Birder's Resource Guide**.
- Join us at birding **conferences** and **conventions**.

"The best value in birding today!"

DEVELOPING AN ARTIST'S EYE

Text and Photograph by Tim Gallagher

Learn the elements of effective picture composition and the quality of your bird photographs will soar

How can I take great pictures of birds? Few questions in the field of photography are as difficult to answer as this one. It's easy to provide technical advice, but photography has an added element that defies an easy formula. It involves having an eye for composition, a feel for color and shape, and other esoteric qualities. Anyone can take technically correct, field-guide-quality shots of birds, but it takes a special knack to turn the image of a bird in your viewfinder into a work of art.

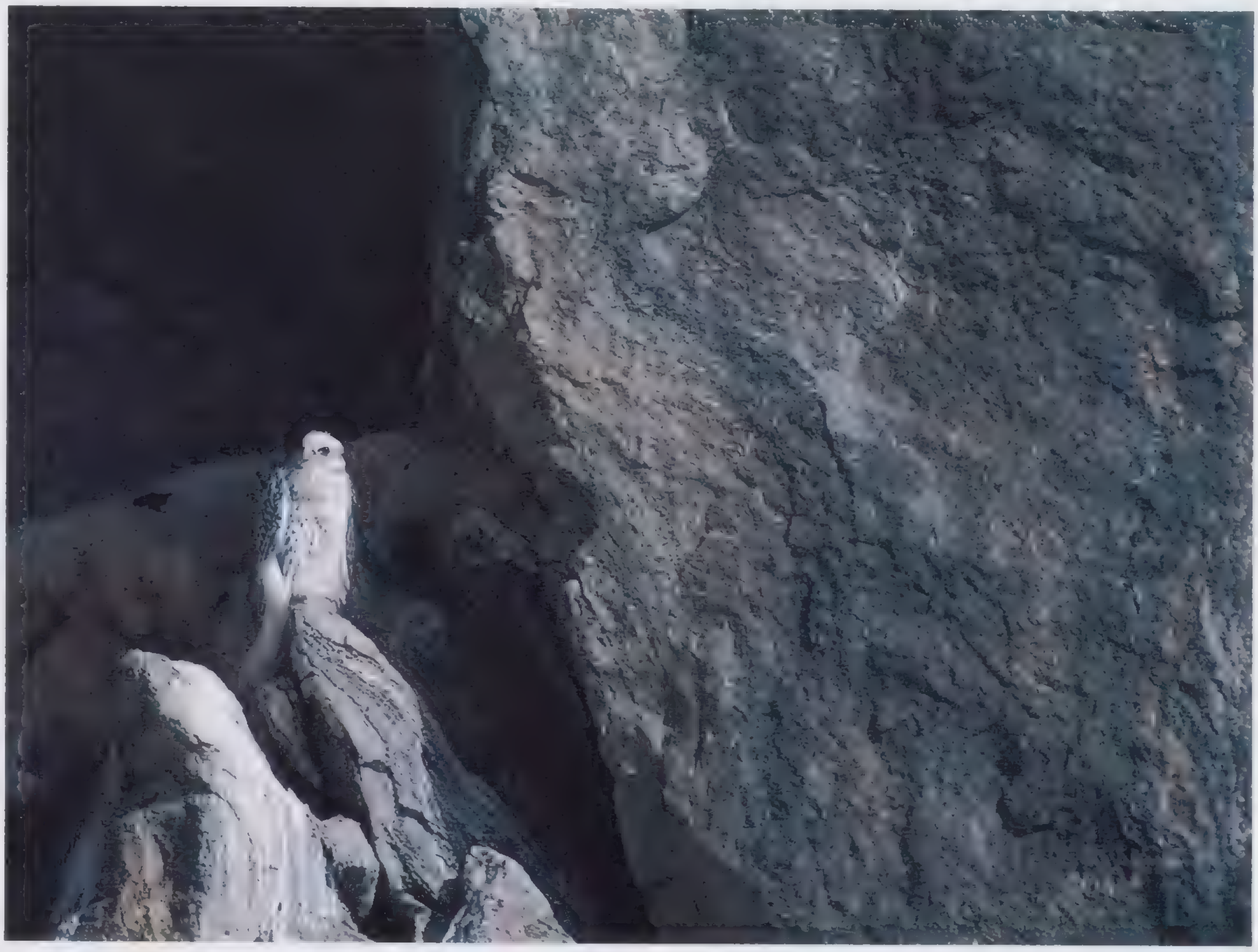
Some people are born with an artist's eye. They're capable of visualizing a great picture and then shooting it. The rest of us must learn the hard way by reading "how-to" books, by studying the work of photographers we admire, and by trial and error. My high school photography teacher used to take us to art museums to look at paintings, illustrations, and even sculptures. He reasoned that these other art forms, in which the artist has complete control over lighting, shape, texture, and color, would provide a more graphic example than a photograph of the principles of composition. Later in class, our teacher would project slides of the works we'd seen and quiz us on what the artist was trying to achieve: What is the point of interest? How is it emphasized?

Though you may not want to spend hours in an art museum, poring over paintings, you should look at a lot of wildlife photographs. Pick up some magazines and go through them slowly, scrutinizing every picture. Which ones appeal to you and why? What can you do in your own pictures to recreate the effects these photographers have achieved?

Bird photographers take their greatest pictures when they've gone beyond the point of having to think about composition—they have an intimate knowledge of the species they're photographing and an intuitive feel for how best to illustrate the things that make this bird unique—however, there are some basic guidelines you should know up front as you start taking pictures of birds.

To begin, look at the elements you have to work with. Foremost is light—the angle, intensity, and hue of your light source can make or break a picture. The most pleasing natural light occurs in the morning and late afternoon. The angle of the light is perfect and the sunlight is warm and subdued, bringing out all the color and texture of your subject's plumage. At midday on a bright, clear day it's hard to take a good photograph. The sun is at its zenith, in terms of its angle in the sky and its intensity. Pictures taken in these conditions have too much contrast, with washed-out light-colored areas and black shadows.

I prefer to take pictures with the sun



As a general rule, pictures with the point of interest placed dead center tend to be boring. I deliberately framed this image of a Greenland Gyrfalcon with the bird in the left third of the picture and included some unusually marked rock in the background to add visual interest.

behind me—not directly at my back, which tends to create a flat image of the bird, but to one side so that the bird casts a shadow; this adds a three-dimensional quality to a picture. It's much more difficult to take a good picture of a back-lit bird, unless you just want a silhouette of your subject.

Another important compositional element is the framing of a picture. Should you position the bird at the center of the viewfinder, or would the shot be more dynamic if you shifted your point of view to one side or the other, or up or down? Should you move in closer to your subject (or use a more powerful lens), or would the picture be more visually interesting if you backed off and included more vegetation?

As a general rule, pictures with the point of interest placed dead center tend to be boring. When we view a picture, our eyes are naturally drawn to the center. If the bird is stuck right there, we have no reason to look anywhere else in the picture, and we quickly tire of the image. If, on the other hand, the bird is at the left side of a horizontal picture, looking toward the right, we create a dynamic interplay that draws our vision repeatedly from the bird to the center in a circular motion. Always try to frame the shot so that the bird is looking into the picture. It looks odd if the bird is right up against the side, staring at the edge of the picture. If the bird is flying, have plenty of space in front of it, so it appears that the bird has somewhere to go.

Other objects framed in your picture can enhance or detract from its composition. Branches, shrubbery, rocks, and other things around the bird can be distracting. I know it's sometimes hard to keep track of the foreground and background when you're doing a major juggling act just trying to follow a bird and keep it in focus, but it's important to avoid ruining a shot by having a branch right behind the bird, looking like it's growing out of its head, or a piece of trash sitting in plain view.

Try to take a second to evaluate a shot before you snap the shutter. Does the tangle of shrubbery behind the bird clutter the picture? Try zooming in on the bird to eliminate some of it. Or open up your camera's aperture more, which can turn the background into an out-of-focus blur. Are any other potentially distracting objects near the bird? Perhaps a brightly colored flower? Maybe you can change your angle a little and eliminate the flower. Or, better yet, figure out an interesting way to incorporate it into your picture. I think pictures of birds are always infinitely better if you can find creative ways to incorporate the bird's habitat into the shot.

Related to framing is camera angle. How low or high you position your camera is especially significant. If you're taking pictures of shorebirds, for example, and you're shooting down at them from your full height, you can't adequately convey what it is to be a shorebird. You need to lie down in the mud with them, eye to eye. Sometimes it's impossible to get on the same level as a bird, especially if it's up in the treetops, but it's something you should always try to achieve.

Having a tilted horizon line in your picture is a common pitfall, which is easy to avoid by installing a focusing screen with a grid etched on it into your camera. Then you can check the alignment of the horizon with one of the grid lines before taking a picture. You should also avoid placing the horizon line in the middle of a picture. This cuts the picture in half and usually looks terrible, unless you're shooting a reflection of a bird in water. It's better to frame the horizon line in the top or bottom third of your photograph.

Focus is a major element in photographic design. You can use focus to isolate one bird in a massive flock or perhaps one body part of a single bird. Sometimes it's impossible to get an entire bird in focus. When in doubt, always focus on the eye—the window to the inner life of any living thing. You may not necessarily end up with a great shot if just the eye is in focus, but if the eye is not in focus, the picture will definitely not be a keeper.

You have all these elements to work with in creating the image you're after: light and shadow, framing, camera angle, and focus, as well as color, shape, texture, motion, and more.

These are your raw materials. How you employ them is what sets your work apart from everyone else's. The key to improving as a bird photographer is to spend a lot of time in the field and shoot plenty of film. But do take the time to think about what you're doing. Make every trip to the field a learning experience. Get a small writing pad and take notes as you try different exposures and techniques. Always look at your slides closely when you get them back from the lab—even the rejects. You can often learn a lot from a bad picture and avoid repeating your mistakes. Constantly experiment with your photography. Find out what works for you. Put your own mark on your work. A good picture tells a lot about the person who took it. It can capture your sense of humor, your empathy for the subject, perhaps even your outlook on life. No one sees things in quite the same way as you. Always strive to be original in your picture taking, and you'll never be disappointed with your results. ■

Looking for a great bird slide?

SHORT-BILLED DOWITCHER BY TIM GALLAGHER

The Cornell Lab of Ornithology has a vast collection of excellent bird slides, available individually or in specially priced sets. Use our slides to fill gaps in your own slide shows or purchase complete sets, some of which include written scripts or taped narrations and bird sounds. Photographs are also available for commercial use. Write today for our free catalog or visit our web site at http://birds.cornell.edu.

CORNELL LAB OF ORNITHOLOGY
159 Sapsucker Woods Road, Ithaca, New York 14850
Phone: (607) 254-BIRD e-mail: djw16@cornell.edu

Ultra Lite, Ultra Bright

Swift ULTRA LITES® are ultra bright to bring out the finest details on each bird, every time.

The high resolving power in each Ultra Lite means that the smallest detail is always crisp, clear and bright. The fully coated lenses are color corrected to capture all the subtle colors and at only 21 ounces you can carry these glasses all day long without fatigue.

"Ounce for utilitarian ounce, penny for performance-minded penny, you cannot buy a better binocular"
PETE DUNNE - ORIGINATOR
WORLD SERIES OF BIRDING

761 Ultra Lite
8x, 42 ZCF

762 Ultra Lite
10x, 42 ZWCF

763 Ultra Lite
8x, 32 ZWCF

SWIFT®

SWIFT INSTRUMENTS, INC.

Swift Instruments supports INTERNATIONAL MIGRATORY BIRD DAY

952 Dorchester Avenue, Boston, MA 02125 • Ph. 617-436-2960 • Web: www.swift-optics.com
In Canada: Vision Canada LTD, Pickering, Ontario L1W 3S1 • Ph. 905-420-8219

WORDS TO LEAD BY

by Pete Dunne

To: **An Incipient Field Trip Leader**
From: **The Bird Field Trip Support Force**
Re: **Your Request for Guidance**

Dear Sir/Madam:

I am responding to your request for *"HELP!!!"* (emphasis yours) concerning the field trip you will shortly be leading for your local bird club. As you know, leading field trips is second only to writing columns as a means of asserting your superior qualities within the birding community. However, convincing birders that you are more skilled and more knowledgeable than those you lead (particularly when this is not the case) can be challenging. Here are some helpful tips. Please use them to advantage.

1. Mumble. Mumbling is a very useful technique. It helps keep the group cohesive (because everyone will be trying to hear you), and it prevents people from contradicting you (you can't gainsay what you can't hear).

2. Walk at the head of the line. When you flush a bird, you will be the only one to get a decent look at it.

3. Never admit you are wrong. Although correcting a misidentification may be helpful to incipient birders, it only serves to undermine your standing and that of fellow leaders. In the event of a booboo (e.g., a Ruby-crowned Kinglet inadvertently called an Orange-crowned Warbler) it is best to redirect attention quickly to the "beautiful" titmouse nearby.

4. Bring better binoculars. Always wear the newest and most expensive roof-prism binoculars. They will intimidate people using binoculars that need not be purchased by engaging the services of a mortgage company.

5. Ditto spotting scope. Always invite other people to leave their scopes in the car (so that you can monopolize all long-distance identifications). If a patron insists on bringing his or her scope, be certain you have a more powerful eyepiece and confide (loudly) that tests have shown that the performance of the other person's scope is undermined by severe chromatic aberrations. Sound apologetic.

6. Name drop. In casual conversation, mention your close association with birders whose names are well known and whose field abilities are genuine.

7. Avoid identification traps. Bird identification is where the failings of most field-trip leaders are found out. Accordingly, 7.1: Never apply a name to a subject if you don't have to. Be subtle, be subjective. Suggest, don't divulge. Example: "First one of *those* today," or "Wow, good one!" 7.2: Be current on all splits and name changes. Not being able to find the names in the index of their field guides will keep followers so busy they won't be able to bird. 7.3: Use Latin. Like you, most people hate to admit that they don't know something. Using a bird's scientific name sounds impressive. If you don't know the names in Latin, make something up. For example, "Ah, *Empidonax enigma*—note the bill extension; or "*Calidris beatsthehelloutofme*—see how small and brown it appears." 7.4: Pin names to birds that are flying directly away or at altitudes that are barely suborbital; who's to say that you are wrong?

8. Control bathroom stops. Continue to promise a bathroom stop right up to the end of the trip. In case of personal need, explain that you are leaving the group "to investigate a tantalizing chip note, alone, so that no one else will be subjected to [choose one] ticks/chiggers/scorpions/poison ivy/wolverines/land mines/carcinogenic contaminants.

9. Always agree. When someone asks whether such and such is a such and such, always say yes. Chances are that they are right, and if they aren't, they now have a vested interest in defending you against anyone who disagrees.

10. All sparrows are Song Sparrows.

11. All hawks are Red-tailed Hawks.

12. Be vague on vocalizations. Never get pinned down on a bird vocalization. All songs are "a little bit off." All calls are "not definitive." All unidentifiable vocalizations are titmice or jays by default.

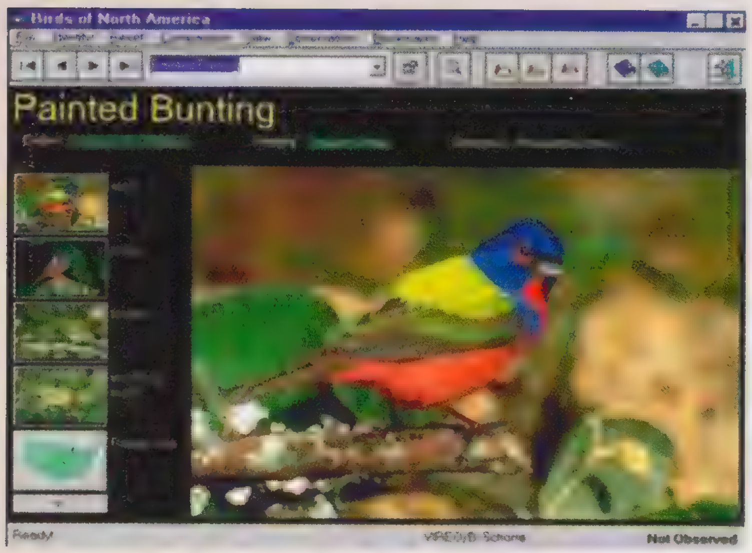
Do not under any circumstances allow this letter to fall into the hands of patrons.

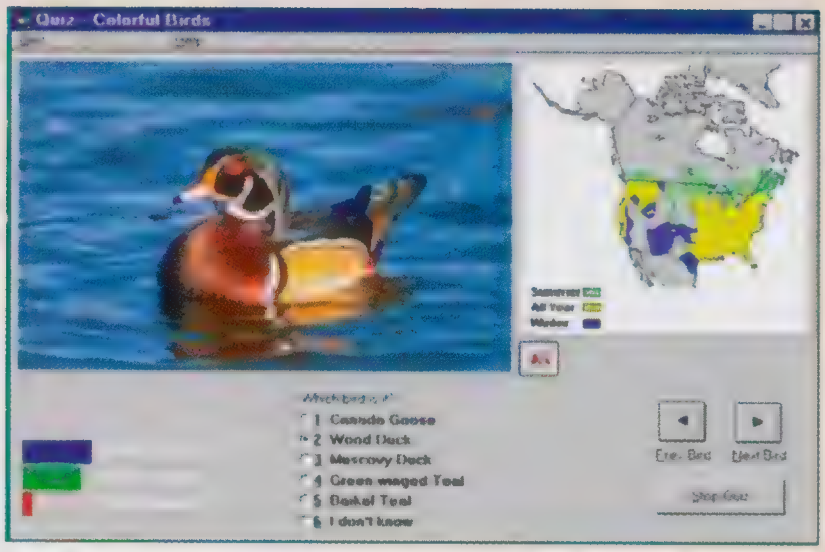
Good luck. ■

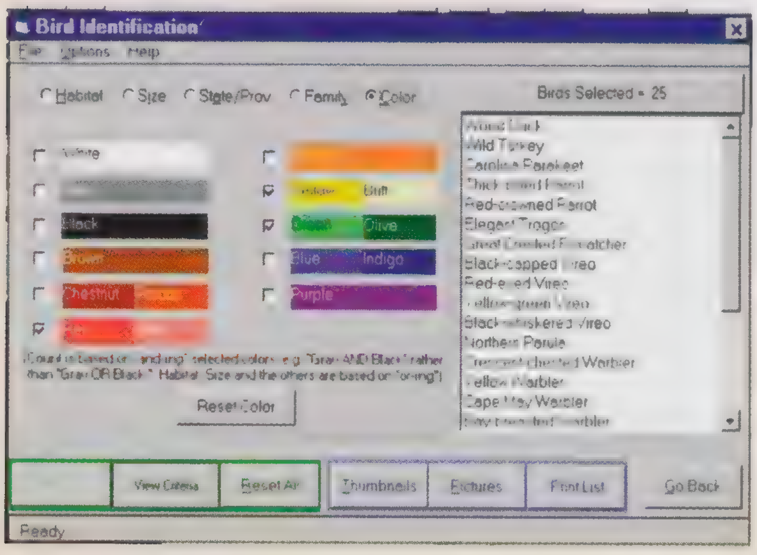
ILLUSTRATION BY JEFF SIPPLE

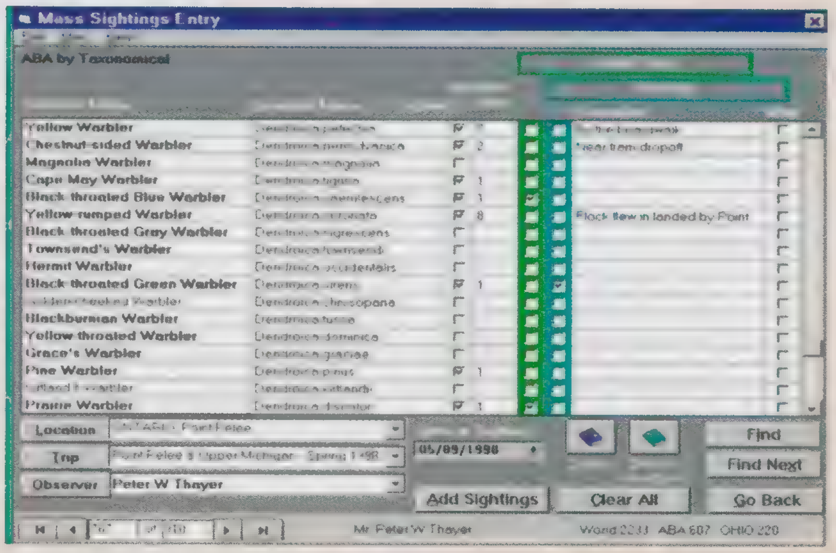
The Best Just Got Better

(Way Better!)









"Thayer Birding Software offers the highest fidelity bird songs found on any CD-ROM project."

-Greg Budney, Curator, Library of Natural Sounds, Cornell Laboratory of Ornithology

The reviews are in! Thayer's Birds of North America is the Best CD-ROM for birders. Top quality songs and superb color photos make an unbeatable combination. Finding a bird is a snap — even if you don't know its name. Over 250 quizzes help you progress from beginner to expert. Use the abundance maps to plan your next birding trip. Watch 121 video clips of individual birds. Play the Avian Jukebox as you work on your computer!

And now it is even better. Version 2.5 adds dozens of new features plus 300 new photos to Birds of North America.

- Make your own screen savers. Select any of the 3000 photos on this CD-ROM including hundreds of colorful birds of the world.
- Make your own quizzes using any of 925 species.
- Play Beat-the-Clock and Video quizzes, great for club meetings!
- Build your own "playlist" with the expanded Avian Jukebox.
- Enter song descriptions to help identify a bird.
- Use the new plumage ID descriptions to separate similar species.
- Enlarge photos to fill the entire screen.
- Recall favorite birds using multiple bookmarks.

Once you see and identify a bird, record your sighting with Birder's Diary. Simply select a date and location and tell the computer which birds you saw. Birder's Diary does the rest! Create hundreds of lists and reports at the touch of a button. Organize your past sightings. Keep accurate records for future research. Use the **free US Mapping CD-ROM** to record the exact spot you saw that eagle's nest. Visit our web site at www.birding.com for free annual updates. Birder's Diary converts your AviSys and BirdBase sightings quickly and easily.

We are pleased to announce that Birder's Diary Version 2.5 now includes the entire text of Dr. Charles G. Sibley's classic reference work *Distribution and Taxonomy of Birds of the World.*

(CD-ROM for Windows • Pentium Processor Recommended)

Birds of North America v2.5 .... $70.00
Birder's Diary v2.5 .... $140.00

Send check along with name and address to: Thayer Birding Software • P.O. Box 770463 • Naples, FL 34107
Add $5.00 Shipping ($10 overseas) • In Florida add 6% Sales Tax • or call for VISA and MasterCard orders:

1-800-865-2473 • www.birding.com

LIVING BIRD

For the Study and Conservation of Birds

WINTER 2000

The Brandon Master Birder

Spotting Scope

- Three-dimensional effect
- Superior eight-foot close-up focus distance
- Full 65° wide angle field of view
- Extra long (1¼") eye relief for maximum viewing comfort, even for eyeglass wearers
- Adjustable magnification from 15x to 45x
- 80mm professional triplet lens design
- Camera adaptable in seconds for full frame photographs
- Black rubber, moisture-resistant armor coating
- Free deluxe Samsonite® carrying case with room for accessories

"Your Master Birder is fabulously machined and the optics are exceptional. I'll spread the word about this scope. You have a first class instrument."

- L.D., Los Angeles, CA

VERNONSCOPE & CO.

Division of Gould Precision Optics, Inc.
Toll Free in U.S.: (888) 303-3526
Phone: (607) 722-5697 • Fax: (607) 722-7939
151 Court Street, Binghamton, New York 13901
www.vernonscope.com

"Beyond my wildest expectations! You've got a real winner here"

- R.D., Union Springs, NY

A Publication of the
Cornell Laboratory of Ornithology

LIVING BIRD

WINTER 2000 VOLUME 19 NUMBER 1

GREETINGS FROM SAPSUCKER WOODS

Well, here it is: the first issue of *Living Bird* in the year 2000. I can't help thinking back to my childhood visions of what this year would be like. I imagined a Buck Rogers kind of world in which space travel was as commonplace as flying on an airliner.

Things didn't quite turn out like that. The main technological revolution of our age has been one of communication, not transportation. As we enter this new century, the big story is the spread of the Internet and the dream of using this electronic medium to deliver information instantly worldwide and hopefully make all people on the planet feel closer and more connected.

This past summer, I had a chance to step back to an earlier, simpler time. I traveled to northwestern Greenland (see page 10) and helped with a study of Dovekies and other Arctic birds. There many Inuit hunters subsist to a large extent on walruses, seals, and narwhals as they have for centuries. But their existence is still tied closely to what we do in the industrial countries. If we produce enough greenhouse gases to raise the temperature of the northern seas by a few degrees, perhaps the plankton there will crash, producing a ripple effect that could threaten the entire High Arctic ecosystem. The remoteness of an area is no longer an adequate defense against environmental abuses taking place thousands of miles away.

For now, we can celebrate the new century and millennium, but we should never lose sight of the challenge we face, to preserve the earth for people and other living things.

Tim Gallagher
Editor-in-Chief

Cover: A Loggerhead Shrike sits stoically upon a fencepost on a chill winter morning in Illinois. Shrikes are often called "butcher birds," because they impale their prey on thorns and barbwire fences. Photograph by Richard Day/Daybreak Imagery.

Right: Dovekies at a nesting colony in northwestern Greenland. These tiny alcids, barely the size of a European Starling, thrive in the frigid waters of the High Arctic, where they dive for zooplankton. To learn more about these fascinating birds, turn to page 10. Photograph by Tim Gallagher.

Back Cover: An adult male Oldsquaw rests at the edge of an ice floe in Hudson Bay. Photograph by Arthur Morris/Birds as Art.

10 TRUE NORTH *by Tim Gallagher*
With the Dovekies in northwest Greenland.

24 LARS JONSSON: A LIFE IN THE FIELD *by Martha Hill*
An intimate portrait of Sweden's premiere bird artist.

36 BIRDS WITHOUT BORDERS *by Kristi G. Streiffert*
New international initiatives seek to preserve vital stopover areas for migrating birds.

Departments

4 LETTERS
5 BIRDNEWS
43 CRITICS' CORNER

Columns

6 FLYING FIELD *by Mel White*
Spanish fantasy.

44 IN THE FIELD *by Jack Connor*
To vee or not to vee.

46 THE CATBIRD SEAT *by Pete Dunne*
A chat about the rules.

LIVING BIRD
WINTER 2000 VOLUME 19 NUMBER 1

Editorial Staff

Editor-in-Chief: Tim Gallagher
Design Director: Kat Dalton
Associate Editor: Leslie Intemann
Technical Editors: Kevin J. McGowan
Kenneth V. Rosenberg
Publications Assistant: Patty Porupski
Contributing Editors: Jack Connor
Pete Dunne
Mel White
David S. Wilcove
Advertising Manager: Barbara Guttridge

Administrative Staff

Louis Agassiz Fuertes Director
John W. Fitzpatrick

Associate Director
Scott Sutcliffe

Director, Education/Citizen Science
Richard E. Bonney, Jr.

Director, Library of Natural Sounds
Jack W. Bradbury

Director, Bioacoustics Research Program
Christopher W. Clark

Director, Bird Population Studies
André A. Dhondt

Director, Conservation Science
John W. Fitzpatrick

Director, Publications
Tim Gallagher

Director, BirdSource
Steve Kelling

Curator, Systematics & Collections
Kevin J. McGowan

Director, Operations
Carol Pyhtila

Director, Communications & Marketing
Allison Childs Wells

Administrative Board

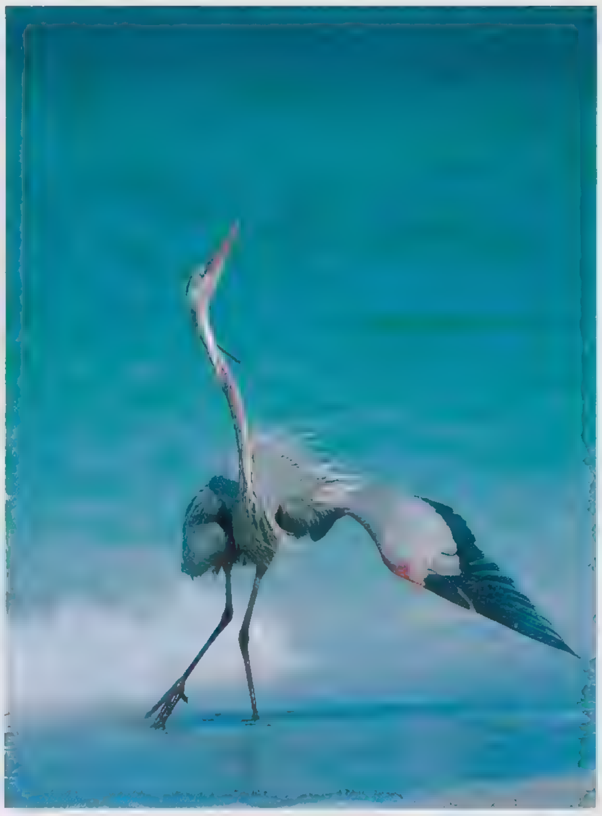
Edwin H. Morgens, Chair

Ellen G. Adelson
E. Edward Bruce
Peter J. Bruns
Thomas E. Donnelley II
Jean W. Douglas
Theodore L. Eliot, Jr.
Jane C. Engel
Cutberto Garza (ex-officio)
Mary P. Hines
Bruce S. Howard
Ronald R. Hoy
Imogene P. Johnson
Mary Johnston
Austin H. Kiplinger
Randolph S. Little
Linda R. Macaulay
Francis P. Pandolfi
Wendy J. Paulson
Olin Sewall Pettingill, Jr.
Elizabeth T. Rawlings
Frank H. T. Rhodes
Carol U. Sisler
Stanley A. Temple
Charles E. Treman, Jr.
Joseph H. Williams
David W. Winkler

Living Bird, ISSN 1059-521-X, is published in January, April, July, and October by the Cornell Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Telephone: (607) 254-BIRD. *Living Bird* is free to members of the Laboratory, a nonprofit, membership organization. Our mission: "To interpret and conserve the earth's biological diversity through research, education, and citizen science focused on birds." For more information please write to our Membership Department. Membership is $35 a year. The Laboratory assumes no responsibility for unsolicited photographs or manuscripts. Copyright 2000 Cornell Laboratory of Ornithology.

Visit our web site at <http://birds.cornell.edu>.
Printing by Brodock Press, Utica, New York.
Printed on recycled paper.

Letters



ARTHUR MORRIS BIRDS AS ART

WORTH A SECOND LOOK

Recently I was looking over back issues of your magazine and came across a picture of a Great Blue Heron on the back cover (Summer 1998), which was described as "looking uncharacteristically gawky." I must tell you that my first impression on seeing the picture of this bird—and my present feeling still—is that it is dancing. You look again.

Dinah L. Foglia
South Huntington, New York

BIRDING WITH MERIWETHER LEWIS

Thank you for publishing the article about Meriwether Lewis's many unsung contributions to ornithology ("Birding with the Corps of Discovery," Autumn 1999). What an amazing man, and what an incredible journey Lewis, Clark, and the other members of the expedition took—more remarkable, in many ways, than even the moon landings of our generation. Kristi Streiffert's article really piqued my interest in the Lewis and Clark Expedition, and I've already read two of the recommended books. I hope to spend a couple of weeks next summer retracing the Corps of Discovery's footsteps and seeing and hearing firsthand the birds they discovered.

Elizabeth Williams
Los Angeles, California

I'm glad to see that your magazine is willing to publish historical articles like Kristi Streiffert's recent account of Meriwether Lewis's scientific accomplishments. Her research was first-rate, and her writing put me right there with the expedition as they made their discoveries. How tragic it was that others who followed in Lewis's footsteps decades later got all the credit.

Alan Stevens
New York, New York

A CONSERVATIONIST FOR ALL TIMES

It was wonderful to read Stanley Temple's fine article about Aldo Leopold ("The Birds of Aldo Leopold," Autumn 1999). I remember reading Leopold's remarkable book, *A Sand County Almanac,* as a boy growing up in the Midwest in the late 1940s. It was one of the most inspiring books I've ever read, and I can truly say that it changed my life and made me aware of the beauty, uniqueness, *and* vulnerability of the natural world. It's hard to believe that a half century has passed since this book was published—and also since the world lost this truly great man. He had such vision and such a way with words. I concur with Dr. Temple and encourage everyone to read Aldo Leopold's timeless essays.

Robert Bartlett
San Diego, California

We welcome letters from readers. Write to The Editors, *Living Bird,* 159 Sapsucker Woods Road, Ithaca, New York 14850, or send e-mail to <livingbird@cornell.edu>.

West Nile Virus Update

As most *Living Bird* readers are probably already aware, an unusual outbreak of encephalitis broke out in the New York City area this past August, causing the deaths of several people as well as numerous birds. The illness was caused by the West Nile Virus, a mosquito-borne virus that had never before been reported in the Western Hemisphere. Birds are the natural hosts for this virus, which is transmitted from birds to other animals and humans through mosquito bites.

According to the USGS National Wildlife Health Center, the virus has been detected in both wild and captive birds in the New York City area. American Crows appear to be by far the most susceptible species. In all, 18 North American bird species have tested positive for West Nile Virus, including American Crow, Ring-billed Gull, Yellow-billed Cuckoo, Rock Dove, Sandhill Crane, Blue Jay, Bald Eagle, Laughing Gull, Black-crowned Night-Heron, Mallard, American Robin, Fish Crow, Red-tailed Hawk, Broad-winged Hawk, Cooper's Hawk, Belted Kingfisher, American Kestrel, and Herring Gull. Except for American Crows, most of these species were represented by very few specimens.

West Nile Virus has been detected in birds from central New York (a single crow in Saratoga County), western New Jersey (Hunterdon and Warren Counties), south-central New Jersey (Burlington County), and east to Suffolk County on Long Island and the East Haven area of Connecticut.

MARIE READ

Large numbers of American Crows (above) fell victim to the West Nile Virus this past summer. Will more birds as well as humans be affected in the months ahead?

It is difficult to assess the magnitude of the mortality at present. Although there have been reports of bird deaths (mostly American Crows) in the thousands in some of the affected areas, a number of these birds died from other causes. Of the 255 specimens tested by the Centers for Disease Control, only about 55 percent tested positive for West Nile Virus.

The USGS National Wildlife Health Center, the Centers for Disease Control, and other state and federal agencies are continuing to carry out a national surveillance effort to document bird mortality. They are particularly interested in receiving reports of sick or dead birds with neurological symptoms from states along the Atlantic seaboard. Specimens collected will be examined at the National Wildlife Health Center and tested for the presence of the West Nile Virus.

Concurrently, the U.S. Geological Survey and several state and federal natural resource and public health agencies and other interested groups are continuing to conduct field investigations in the area of the outbreak. The investigation will continue to focus on collecting information and samples to help determine the number of wildlife species involved, the geographic and temporal distribution of the virus in bird populations, and whether the range of the virus is expanding beyond the currently reported sites.

For further information and to report sick or dead crows or other unusual bird mortality, contact USGS Wildlife Disease Specialists Linda Glaser at (608) 270–2446 <linda_glaser@usgs.gov> or Kathryn Converse (608) 270–2445 <kathy_converse@usgs.gov>.

An Online Shop . . . for Birders

You've all heard of online shops for clothing, gourmet foods, and even stocks and bonds. Well, now there's one for birding supplies—feeders, nest boxes, birdbaths, videos, and more. And each purchase helps support the Cornell Lab of Ornithology's efforts in research and conservation. Look for the Birding Shop button on the Lab web site: <http://birds.cornell.edu>.

Flying Field

SPANISH FANTASY

by *Mel White*

Making dreams come true in the Iberian Peninsula

It's a cool April evening as shadows fill Trujillo's cobblestone Plaza Mayor—but, with a sweater, not too chilly for early supper at a sidewalk cafe. The sky still shows the last deep-blue light of day, though the sun long ago disappeared behind the walls of the castle looming over the west end of the plaza. Established by Romans, the hilltop bastion was already ancient when the Moors enlarged it into a massive fortress a millennium ago.

To the east rises the square Gothic bell tower of a 16th-century church, and beside it stands a grand equestrian statue of the conquistador Francisco Pizarro, who, before moving on to the New World and a career of treachery and murder, was born right here in 1475. Who wants to eat inside in these surroundings?

As stars begin to appear, a cassocked priest leaving the church stops by our table to ask us how we are tonight.

"Very well, sir, thank you."

"And how do you like Spain?"

"Well," I say, "we've been in the country only a few days, but we like it a lot. We've wanted to visit for a long time, and we're happy to be here now."

"Did you come to see the countryside, to see our old cities like Trujillo?"

"Yes, but we're also—I'm sorry, I don't know the words—aficionados of birds." (Here I make circles, fingertips to thumbs, and mime looking around with binoculars.) "So we've come to see birds, too."

The priest smiles and says some things that exceed my translating abilities but that I assume are a benediction for our travels, and then he walks on as we go back to our beer and olives and our plates of serrano ham and cheese and bread.

For me, the words "wanted to visit" constitute a major understatement. Spain has been near the top of my wish list for years, for reasons partly cultural but mainly ornithological. Armchair birding with European field guides, I couldn't help but notice how many species' ranges touched parts of the Iberian Peninsula but extended no farther north. Spain, it seemed, was the south Texas of Europe—or maybe the southeast Arizona. Or maybe both.

So, encouraged by some frequent-flyer miles that were about to expire, a friend and I made the trans-Atlantic hop to Madrid, picked up our Ford Mondeo, and headed west toward Extremadura and Andalucía. Here, it seemed from our pre-trip reading, would be mountains and plains, wide-open spaces with not too many people, and a great number of birds we wanted to see. My imagination was filled with visions of Great Spotted Cuckoos, European Rollers, sandgrouse and warblers, larks and eagles.

And most of all, of bustards. The Great Bustard, a huge, turkeylike bird that can weigh up to 40 pounds, and its smaller relative the Little Bustard both inhabit grasslands and agricultural areas. The Great, especially, has suffered severe population declines with loss of habitat and modern farming practices. Over time, the Great Bustard had taken on a mythic quality in my mind: yet another magnificent creature unable to adapt to the constraints of a remade world, pushed into a dwindling number of isolated havens—rare, shy, and probably doomed, like our own bison, to a human-managed existence in a few relict populations.

But as we drove along the N-V freeway on that cool Monday morning, our thoughts were on more immediate considerations. Like getting off the freeway. At Talavera de la Reina we turned north through pastoral country that looked fairly birdy, but every likely looking spot was marked "Private," or, worse yet, *Toro Bravo.* Anybody who'd cross a fence with a "wild bull" sign in Spain is far, far bolder than I.

Soon, though, we saw a flash of color and—what luck!—a scrubby place beside the road with a parking spot and no fence. The flash was a European Bee-eater, gorgeous in copper, blue, and yellow. In fact, a little party of them perched on telephone wires where we could set up the scope and watch. And then, nearby, the fulfillment of another fervent wish: a Hoopoe, a peculiar kingfisher relative in pinkish buff and zebra stripes. Disappointingly, this odd bird flitted away before we could get a great look. Oh, how I wished one would land somewhere so I could really study it! But though we saw many other fly-bys on the trip, one never did.

Higher into the Gredos Mountains we stopped at a pass called Puerto del Pico, a cold and windy place of scrubby vegetation at 4,435 feet. It was beautiful in a stark, subalpine way, and we liked it even more when out of the bushes popped a Dartford Warbler, a species we'd searched for in England to no avail. There were more new birds here, including a neatly striped Rock Bunting, but logistics forced us to move on. We had reservations in Plasencia, 70 miles southwest, and there was a spot I wanted at least to drive through on the way.

ILLUSTRATION BY JOHN SCHMITT

That spot was Monfragüe Natural Park, a renowned destination in Spanish birding. Here, in forest and on steep, rocky cliffs at the confluence of the Rivers Tajo and Tiétar, raptors nest in one of Europe's great assemblages. We approached from the east along the Tiétar, where we luckily spotted a hovering Black-shouldered Kite, a bird with a very limited range in Europe. Soon we were passing through the parklike, cork-oak-shaded grazing land called *dehesa,* and seeing small, noisy parties of Azure-winged Magpies. This species is found only in Iberia and China; current speculation holds that Portuguese sailors brought birds back from their travels to the Far East centuries ago, and that the present disjunct (and otherwise inexplicable) European population stems from those introductions.

Rounding a curve in the narrow road, we got our introduction to some of Monfragüe's celebrated residents. At riverside bluffs called La Portilla del Tiétar, numbers of Eurasian Griffon vultures sailed overhead and perched on rocks. Soaring with them were a few Egyptian Vultures: smaller, black and white, with a wedge-shaped tail.

By now we'd been up for 40 hours or so. It seemed wise to move on to dinner, and sleep, in Plasencia and to return to Monfragüe in the morning. So after a quick look at the famous nesting cliff called Peñfalcon (no falcons, but a Blue Rock-Thrush), we called it a very long day.

Tuesday found us back at the Portilla, where we found several parties of other birders—and a Short-toed Eagle soaring with the griffons. I showed a Spanish birder a picture of the Cinereous (a.k.a. Black, a.k.a. Monk) Vulture, an endangered bird that's one of Monfragüe's specialties. *"Muy raro,"* he said, shaking his head. He pointed to the Egyptian, and said we'd have a better chance of seeing that one.

We had better luck with a friendly group of Norwegians, who'd been in the park area for a couple of days and who spoke English like they'd gone to school in Lake Wobegon. I had just asked one of them about Black Stork—a species far less common than the White Storks that nest on barns and steeples everywhere—when he looked up and said, "Look, there it is now." One of these beautiful birds was soaring gracefully upstream along the cliff face. In a minute or so another appeared.

Gee, that worked. What about Black Vulture? It turned out there was a well-known observation site back down the road. You park at a lookout area and scan the ridgeline a mile south for a nest in a tree. But, the fellow said, it's very hard to spot unless you know exactly where to look.

A slim chance is better than none,

so we drove to the vista point and set up the scope. There were many, many trees on the ridge, and it was very far away. But wait . . . After just a few minutes, a raptor appeared soaring over the ridge. It looked huge . . . um, considering that it was a mile away.

Sometimes the wind is right, or the bird is feeling cooperative, or it's your lucky day. The soaring dot circled closer, and closer, and still closer, until it soared right above us, so near we could easily see the distinctive pattern of bare facial skin. Huge? With a wingspread nearly a foot greater than a California Condor's, this thing looked like a chunky black sailplane as it passed overhead. Now that was a birding moment.

By this time it was late afternoon (jet-lagged, we hadn't even started birding till after noon), so after another stop at Peñfalcon (noisy school-outing group; no new birds) we drove on to Trujillo. A report I'd found on the Internet had mentioned a road near this historic town where birders had found Great Bustard, and we'd made a visit one of our priorities.

After checking in at the hotel, we realized we had enough daylight left to check out the drive, a few miles out of town beyond a village called Belén. We found the spot with no trouble and soon were driving through rolling grazing land along a narrow and blessedly traffic-free road. We had just seen our first Red-legged Partridge when we spotted a curious dark shape far out in a field. It could have been a stump or a small dog or a piece of trash—but in the scope appeared the black-and-white neck pattern of a single male Little Bustard, as motionless as a fireplug.

Joy reigned. We'd just seen one of our most-wanted birds on a last-minute scouting trip. What luck must it have taken to see this one solitary bird at dusk, all alone in the middle of the vast grassland? Was he the last of his kind here, searching in vain for a mate, destined to waste away from loneliness? What if we'd decided to get a beer instead of coming out here?

Well, maybe it's better not to think about questions like that last one. The beer came immediately afterward in Trujillo's Plaza Mayor, along with tasty tapas and the friendly priest's untranslated parting words. Were they a blessing, some sort of "Good birds to thee"? What would tomorrow bring?

Back at the plaza for breakfast, we admired Lesser Kestrels flying around the castle walls. Then, of course, we headed back to the Belén road.

Now here is an amazing confession. Incredible, and embarrassing, and absolutely true. We were driving down the same road as the night before, creeping along, scanning the fields, and I had but one idea in my mind: Great Bustard. It was the bird I most wanted to see in Spain. I had fallen asleep thinking about it. I was in a spot where they were known to be found. Their little cousin still survived here, we knew. Great Bustard. The bird occupied the same place in my thoughts that the noose does in the mind of a condemned man. It was the all.

The Great Bustard occupied the same place in my thoughts that the noose does in the mind of a condemned man. It was the all.

So, when we topped a rise and I looked ahead across that sunlit landscape, what exactly popped into my head?

Jeez, they don't have pronghorns in Spain, do they? What the hell *are* those things? Tan sheep? A herd of collies?

That's the honest truth. Thirteen male Great Bustards stood in a field right in front of me, and I didn't recognize them. Now, admittedly, my stupefaction lasted maybe five seconds. But still. . . . This was some sort of weird cognitive antithesis of wishing yourself into seeing a bird you really want. Seeing a Great Bustard wasn't supposed to be this easy, this straightforward, this multiplicitous—this spectacularly wonderful.

Plus, the damned things were so big.

And if the 13 males right across the fence weren't enough, there were at least a dozen more males and females off in the distance, along with eight or ten Little Bustards of both sexes. Some of the male Littles and Greats were displaying, the former puffing up their pied necks, the latter puffing up their . . . their everything, till they looked like exploded feather pillows.

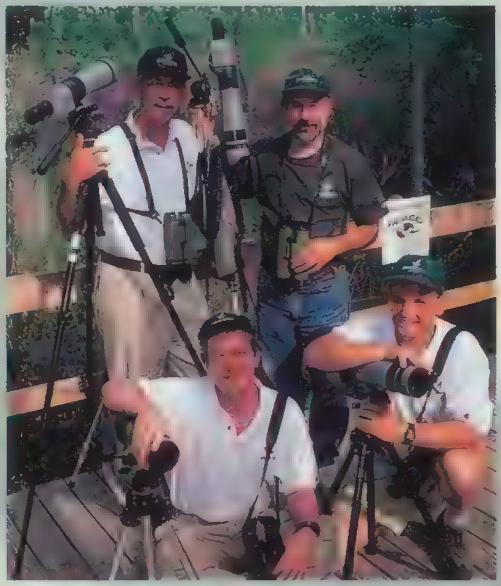
Wow. Double wow. I suppose this is how a gambler feels when the bells ring and the lights flash and the silver dollars just keep pouring out onto the floor.

Our trip had many days yet for us to enjoy, and many more good birds were to come. Andalucía brought hundreds of Greater Flamingos and a single Little Owl, showy Collared Pratincoles and inconspicuous Short-toed Treecreepers, marshes with Zitting Cisticolas and mountains with Bonelli's Warblers. Without a doubt, though, those few minutes out on the windswept steppeland remained the highlight.

Once we got used to a few of the quirks of a Spanish vacation (dinner at 10 P.M.; crazy drivers; teeny, tortuous city streets) we had a wonderful time traveling through country that reminded me of the High Plains—if the Rockies bordered central Kansas, say. The people were unfailingly friendly and helpful, the highways were excellent and well-marked, the nightly ritual of hopping from one tapas bar to the next was fun, and, to make things even nicer, the whole thing was amazingly cheap. By the time we turned back north to return to Madrid and the flight home, we were sure we were saying *hasta luego* and not *adiós*.

And when we go back I'll hope to meet another friendly priest, and maybe then I'll get to see a Great Spotted Cuckoo. ■

SAPSUCKERS' DELIGHT



Clockwise from top John Fitzpatrick, Ken Rosenberg, Steve Kelling and Kevin McGowan

The "Sapsuckers" birding team from The Cornell Lab of Ornithology, Ithaca, NY, <www.birds.cornell.edu> knows optics. Optics define their birding and wildlife observations. They even publish evaluation studies covering binoculars or spotting scopes in the lab's magazine "Living Bird". They consider all good optics. Some are very good; others are even better.

For their personal and professional use, they use Swarovski HD spotting scopes and 10X50 SLC binoculars. According to team members, "The brilliant resolution, image contrast, brightness, rugged waterproof integrity and overall performance of Swarovski optics are generally superior to any other brands we have tested. Also, the Swarovski Optik Limited Lifetime Warranty* and speedy repair service is the very best. Check it out."

Now don't just accept the "Sapsuckers' Delight" as gospel truth. Visit your nearest Swarovski Optik dealer and see for yourself or ask a friend who owns a Swarovski spotting scope or binocular. Call 800-426-3089 or visit **www.swarovskioptik.com**

Tim Vezo

LAB'S MASCOT

SWAROVSKI
OPTIK
1949 - 1999

With The Eyes of a Hawk

*Original warranty card must be postmarked within 30 days of purchase from an authorized Swarovski dealer in good standing Entire product must be returned with warranty claim by registered warranty holder.

Swarovski Optik North America, Ltd.
One Wholesale Way, Cranston, RI 02920

Looming high above North Star Bay, Dundas Mountain is the most distinctive landmark in the Thule area. The Peregrine Falcons nesting on this massive butte were the farthest north breeding pair of this species known in the Western Hemisphere and perhaps the world—until we headed farther north this past summer and found three additional peregrine nests that broke this record. The tiny, starling-sized Dovekie, at right, is one of the most abundant birds in Northwest Greenland, with a breeding population of approximately 60 million.

True North

TEXT AND PHOTOGRAPHS BY TIM GALLAGHER

With the Dovekies in Northwest Greenland

24 JULY 1999; THULE/PITUFFIK, GREENLAND: Thule Air Base is an eerie place. With its huge fuel tanks, its rows of long barracks raised above ground and weighted down with massive concrete blocks to withstand hurricane-force winds, and its elaborate network of heating pipes threading across, around, and into every building, the place looks like a NASA outpost on Mars. And the barren, reddish hills and vast glacier looming above it only add to the effect. Still, it's a welcome sight after flying due north for six hours in the cramped rear cabin of a cargo plane with nothing but glaciers, icebergs, and dark, frigid sea as far as you can see below.

It is late July, shortly after the annual breakup of the pack ice in northwest Greenland, and I've come to visit the High Arctic Institute—a private research center headquartered at the base. The

BHL

Blank Page Digitally Inserted

Kurt Burnham steers his Achilles twin-engine rubber boat through icebergs on the northwest coast of Greenland. The boat's brand name made me wonder what its Achilles' heel might be. Below, standing atop the Greenland icecap gave me a new appreciation of the word cold.

Peregrine Fund launched the institute several years ago and is conducting ongoing studies of far northern birds. I'm traveling with Bill Burnham, president of The Peregrine Fund, and we plan to spend a couple of weeks banding Dovekies *(Alle alle)* and exploring the coast and offshore islands of Greenland, searching for nesting Gyrfalcons *(Falco rusticolus)* and Peregrine Falcons *(Falco peregrinus tundrius)*.

At a latitude of 76 degrees, 32 minutes North, Thule is hundreds of miles north of the Arctic Circle and only about 800 miles from the North Pole. At this time of year, the sun is up 24 hours a day and doesn't even touch the hilltops as it makes its daily circuit around the sky. It can be as bright at midnight as it is at noon. But in October, the sun sets for the winter, plunging the area into darkness until February. The winds here are legendary. The massive fuel tanks at the front of the base—as large as those in an oil refinery—bear massive dents from the incredible pounding of the northern Greenland winds, which can hit at any season, bringing all travel to a halt. On several occasions, Bill has been stuck far from the base for days at a time—hunkered in a low tent in the lee of some protective boulders, waiting for the squall to die down.

More frightening was the time two years ago when Bill, his son Kurt, and Jack Stephens (a weather forecaster at the base) made a horrendous voyage in a twin-engine rubber motorboat, traveling from their Dovekie base camp south of Thule up the coast during a storm. As they plied their way northward, the seas churned violently and the winds blew at more than 100 miles per hour, pushing apartment-house-sized icebergs shoreward. With icebergs moving fast behind them, they ran the boat up a glacial stream at Cape Atholl and tied off on some boulders, just before the icebergs clogged the entrance. If they had arrived just five minutes later, the stream would have been blocked, and they would have had to make an all-out run north, around the point and into the huge Wolstenholme Fjord that leads to Thule. Bill doubts they would have made it. As they got to land, the snow was blowing horizontally, drifting several feet deep in places. And this was on the eighth of August—the height of summer in northern Greenland. Everyone who travels by boat in this area constantly searches for inlets, bays, or other sheltered areas to run to if a storm comes up, because the weather can change in a matter of minutes.

27 JULY 1999; WOLSTENHOLME FJORD, GREENLAND: On this, our third day in Greenland, we get up at 4:00 A.M., eat a quick breakfast, and head to sea. We've been grounded at the base by gale-force winds for the past 30 hours but are heading to the Dovekie base camp today, hoping that the weather conditions will continue to improve. Bill and I travel in the red boat, while Kurt and Jack take the faster gray boat. These are both Zodiac-style rubber boats, although they carry the brand name Achilles—which makes me wonder what their Achilles' heel might be. They each run two hearty 40-horsepower outboard motors, which provide power and dependability—if one motor dies at an inopportune moment, you still have the second motor to get you safely home.

The temperature plummets as soon as we leave shore and start threading through the icebergs in Wolstenholme Fjord, a vast inlet, miles across, leading from Thule Air Base at North Star Bay to the open sea. Even though I'm wearing an expedition-grade parka, I'm unbearably cold a lot of the time. I put a fleece hat on, pull my head deep inside my parka hood, and cover my eyes with glacier glasses to block the icy wind. I only wish I had something to cover my nose, which feels like a block of ice stuck to the middle of my face.

Though the environment here is harsh, it is incredibly rich. Everywhere I look I see bird life—squadrons of Common Eiders *(Somateria mollissima)* fly past almost constantly; Black Guillemots *(Cepphus grylle)*, Thick-billed Murres *(Uria lomvia)*, and Dovekies skitter over the frigid water in front of us.

Two days earlier we took a shakedown cruise to make sure the boats were running well, and we visited many of the bird islands in Wolstenholme Fjord. On Dalrymple Rock, a pointed outcropping about 15 miles from the base, we visited nesting colonies of Atlantic Puffins *(Fratercula arctica)*, Common Eiders, and Black Guillemots. I took many full-frame pictures of these birds as I scrambled around a rocky cliff with my cumbersome 500mm lens and tripod. We also explored Saunder's Island, one of the largest islands in the area. The cliffs surrounding the island are full of nesting Thick-billed Murres, which is not surprising—the Inuit name for the island, Agpat, means murre. We circled the island, checking the lofty sea cliffs for falcon nests but found none, although we did find, in addition to the murres, many nesting Black-legged Kittiwakes *(Rissa tridactyla)* and Glaucous Gulls *(Larus hyperboreus)*.

As soon as we round the point and move into the open sea, we're hit by large swells that pound the boats, rocking the icebergs around us. But at least we can see the big bergs. It's the smaller, low-lying chunks of ice you have to scan for constantly—especially the clear ones that lie on the surface of the water like great sheets of Saran Wrap but can slice a rubber boat like a can opener or flip it over, spilling its passengers into the icy sea. It only takes a few minutes to lose consciousness and die in this frigid water. Even Inuit walrus hunters, who know these waters better than anyone, sometimes wash ashore, perhaps thrown from their boats by hidden chunks of ice or waves. Most of the local people don't even wear life preservers. They call them "body finders," which is about all they're good for if you fall overboard.

When we reach our base camp, several miles south of Cape Atholl, we take the boats up a glacial river and tie them to boulders. It is high tide but in a few hours the tide will go out, leaving the boats high and dry until the tide comes in again. It's vital to have a tide chart and follow the risings and fallings of the tides closely, or you could get stuck for hours before the tide rises enough to float your boat out.

A Peregrine Falcon, the female of the pair nesting on Dundas Mountain, flies above the bizarre landscape of Thule Air Base—a place with the look and feel and all the charm of a NASA outpost on Mars.

Unloading the boats resembles a military assault. We form a line, handing trapping gear, tents, stoves, food, and other equipment from person to person, quickly emptying the boats. We then clamber over the streamside rocks and carry everything up a steep trail to a large, grassy, plateaulike shelf 50 or 60 feet above the river, where we pitch our tents.

This is an ideal camp site, close to a major Dovekie colony and with a spectacular view of the sea and a convenient supply of fresh water at the stream. But we're not the first people to choose this remote spot as a camp. Close to where we pitch our tents are traces of an ancient Inuit encampment—the foundations of several huts dug into the ground. After Bill first reported seeing these ruins, a team of Danish archeologists visited the site and said

The cliffs on Saunder's Island provide nest sites for thousands of Thick-billed Murres (above left) and numerous Black-legged Kittiwakes (left). The Inuit name for the island, Agpat, means murre.

they were centuries old, perhaps the oldest ruins of their kind in northern Greenland. These tiny, eight-by-ten-foot huts probably originally had whalebone struts holding up a roof of animal skins, and each one would have housed an entire family. Perhaps the Inuit came here to catch Dovekies, which, to this day, they consider a great delicacy. They traditionally caught the birds by snatching them out of the air, midflight, using a hoop net on the end of a long narwhal tusk.

The Dovekie colony lies straight across the river from us, up a steep grassy slope, among the talus rock at the base of a cliff. Peregrine Fund researchers have been trapping and banding Dovekies here for the past five summers. We set up mist nets in three areas of the colony, right at the base of the talus slope. Each year, the team has set up the nets in exactly the same places. The researchers are trying to learn more about the nest-site fidelity of these birds as well as their longevity. Not much is currently known about Dovekies, and virtually all of the data the institute gathers are useful. The birds fly far out to sea and feed on zooplankton. When they fly back to their nests, their gular pouches are bulging with slimy, purplish-red zooplankton, which they regurgitate for their young. They are very sociable birds, frequently gathering together in little groups, chattering softly and interacting with each other. Though they are not much bigger than starlings, they remind me a little of penguins as they waddle around together, showing off their striking black-and-white plumages.

Each of us lay on the grassy slope below the mist nets, hiding under see-through camouflage material, waiting for Dovekies to get snagged. The trapping is sporadic at best. Sometimes an hour or more goes by with no action, and then suddenly five or six birds fly into the nets at once. Some of the Dovekies immediately spin around when caught and require a lot of work to untangle. They nip our fingers hard with their little puffinlike bills but usually don't quite break the skin.

Lone Glaucous Gulls occasionally cruise over the colony, flushing thousands of screaming Dovekies, which fly around above the canyon in a panic until the danger passes. The sound is deafening but oddly familiar, like the crowd roar at a Major League baseball stadium when a home-team player hits a grand slam, but heard from five miles away. I see a Glaucous Gull fly past with a Dovekie in its bill, once again putting up countless scores of birds. I also spot an Arctic fox working the colony, sniffing around, trying to find an adult Dovekie or its young sitting a little too close to the entrance of their nest hole in the pile of talus rubble.

We quit trapping at 7:00 in the evening. The sun has barely broken through the bone-chilling fog all day. Kurt cooks a spaghetti dinner, with meat sauce, vegetables, and home-baked biscuits. It's the best meal I've ever eaten—except for the wine. The chardonnay Bill and I brought from Thule has turned an odd, pinkish-red color, somewhat like the color of gasoline, and it smells like vinegar. Was it shaken up too much as we bucked the waves coming down here? Is this what they mean by bruising the wine? I don't know. We drink it anyway.

Flowers bloom in profusion in the brief High Arctic summer along Wolstenholme Fjord. This picture was taken in the 24-hour-a-day sunlight of August. In October, the sun sets for the year, plunging the area into darkness until February.

29 JULY 1999; DOVEKIE BASE CAMP: This is the third day of trapping Dovekies for Bill and me. Jack and Kurt returned to Thule yesterday toward the end of the day so that Kurt could give a talk about the High Arctic Institute. He was also going to pick up another researcher, Jim Enderson, at the airport.

We catch several more Dovekies in the morning but things are definitely slowing down. At one point, Bill shows me a banded Dovekie he retrapped. The band, provided by the Danish government, is numbered 001—the first Dovekie Bill banded here when the study began five years earlier. "These birds are living longer than many people thought," he tells me. The site fidelity of these birds is also amazing. All of the retraps from year to year tend to be in exactly the same section of cliff where they were originally trapped.

Bill plans to continue banding Dovekies in this location in the years ahead. He sees Dovekies as an effective barometer for monitoring the health of the High Arctic maritime ecosystem. In many ways, zooplankton and the animals that consume it are the keys to the whole food chain here. Dovekies exist entirely on zooplankton from the deep Arctic seas. Many predatory birds and mammals in turn depend on these easy-to-catch Dovekies for food. If global warming, environmental contamination, or other ecological threats should devastate the zooplankton in the High Arctic, a crash in Dovekie numbers might be the first indication of a problem.

Dovekies fly far out to sea and feed on zooplankton. When they return to their nests, their gular pouches are often bulging with these slimy, purplish-red organisms (at left), which they feed to their young.

Although Bill has been a raptor researcher for most of his adult life, he is clearly fascinated by Dovekies. "The site fidelity of these birds is so phenomenal that you could probably learn enough from a small population like this one to extrapolate to the entire population." Dovekies nest on newly fallen rock talus slopes and breed there each summer until the slopes become lichen covered and the rocks start to break down. Then they leave to find new nesting areas in places that have had recent rockslides. Dovekies provide food for more than just the animals that prey on them. The grass and peat at the base of these cliffs is only there because of the guano these birds excrete, providing a rich source of nitrogen for plants. Musk oxen, Arctic hares, and other herbivores make good use of the habitat created by the Dovekies as they transform zooplankton from the deep sea into grass on the hillsides.

It has been foggy most of the morning but it starts to lift at midday, about the time we are leaving. The tide is turning just as we pull out. Bill says if we'd left five minutes later, the boat would have been stuck, and we'd have had to unload it quickly and push it out to deeper water, then load it again. We cruise up the coast in the eerie sunlight, stopping at the Cape Atholl Gyrfalcon nest. We spot the adults on a nearby cliff face—the male sitting several feet below the female. They're the whitest falcons I've ever seen. I don't see a dark mark on the adult male Gyrfalcon's entire body.

We tie the boat to a boulder at the bottom of a massive sea cliff. The nest must be 600 feet up and a tough climb. I almost leave my camera gear on the boat, rather than taking it on such a treacherous climb. But then I think, when else will I get a chance to photograph white Gyrfalcons? It's quite a struggle trying to keep up with Bill, who climbs like a mountain goat, consistently staying 20 or 30 feet above me. What a climb. It seems to get steeper and steeper. And now we're not even climbing on solid rock, but reaching high over our heads to grasp round tussocks of grass, which we're

For five seasons, researchers from the High Arctic Institute in Thule have trapped Dovekies with mist nets set up in three locations in front of a massive breeding colony. Each bird trapped is quickly weighed, measured, banded, and released. At far left above, Bill Burnham (left) and his son Kurt band a Dovekie.

Each time that a Glaucous Gull (far right) or other predator flew over the nest colony, thousands of Dovekies would explode from the cliff, flying around in a panic and emitting a shrill distress call. It sounded almost like the crowd roar of a distant baseball stadium.

using for handholds and footholds—and we're not using any ropes, ascenders, or pitons to assist our climb.

About two thirds of the way up, Bill stops to wait for me and asks if I'd like him to carry my gear for awhile. Of course, I have something to prove and don't want to seem like a wimp, so I wait a full tenth of a second before replying, "Yes!" I feel guilty but grateful. We climb to a ledge even with the nest, directly across a narrow gully from it. The view is fantastic, and a beautiful, fully feathered male Gyrfalcon sits sunning himself at the front of the nest ledge. I take many pictures of him and also some of a Glaucous Gull with one young on another ledge.

As we sit there watching the young falcon, fog starts drifting in again. Bill suggests we make our way back to the boat as soon as possible. It is even more treacherous on the way down than it was going up. I try descending a different way than Bill, hoping it's easier, but I end up standing on a lone boulder, far below, with waves lapping against it. Bill finally drives around with the boat and I jump aboard.

It is flat calm and eerily quiet on the way back, with no tossing swells like we had on the trip here three days earlier. But the fog continues to build, coming on thick and heavy and gray. Massive white icebergs loom ahead. The thunder of calving glaciers echoes in the distance. Some of these glaciers move more than 100 feet a day and calve icebergs the size of city blocks. We move slowly along, trying to keep sight of shore without hitting jutting rocks in the water. At one place, near a river delta, the water is only two feet deep and we have to crawl along, searching for protruding boulders and jagged ice. It is freezing all the way back. I hunker into my parka, the hood pulled tight. My thoughts are far away. The endless drone of the engines sounds like the braying chant echoing from a distant Buddhist monastery.

Through the fog, I make out the indistinct shapes of some shacks, which the Inuit use as a winter hunting camp. It occurs to me what a fleeting presence the native people have been for me here, more intuitively sensed than seen. I've run across signs of them everywhere—their piled rock graves on the islands; their food caches of walrus carcasses and eider eggs buried in the shallow, perpetually cool beach gravel—but I've met few of them. I remember seeing an Inuit hunter's motorboat tied to the jetty in North Star Bay. The boat's small outboard motor was bare to the elements and rusted, its metal cover long since lost. Three huge plastic containers of fuel, a couple of duffel bags, and several cases of Pepsi-Cola were the only supplies aboard. A high caliber, bolt-action rifle lay on top, in plain sight and badly rusted. But lashed on top of the boat and to one side, to leave room for the boat's driver, sat a sleek Inuit kayak, the most beautiful, well-crafted one I've ever seen, with a hand-held harpoon attached to it. What an odd mix of cultures and technologies was represented there.

30 JULY 1999; THULE AIR BASE, GREENLAND: It is foggy today, so we take the opportunity to work on the boats, making minor adjustments. We eat at the mess hall, which is an interesting place. In large, bold letters on the wall as you enter is a message written in both English and Danish warning about the dangers of eating high-cholesterol foods. This is a lot like the health warning on the side of a pack of cigarettes, because the food they're serving is an amazing assemblage of greasy bacon, ham, and fried eggs, as well as wonderful, butter-rich Danish rolls. As I stand in the cafeteria-style line, a young Danish woman behind the counter asks me if I'd like some bacon. "Yes, please, a couple of pieces." She reaches into the huge pile of bacon with tongs and pulls out 15 or 20 thick slices of bacon, stuck together like glue. Dropping them on my plate, she smiles and says, "I hope you like bacon."

Thule Air Base is like a huge life-support system dropped in the middle of a wilderness. Walk just a mile or so from the base, and you're in a different world—one of the most unforgiving environments on the planet. Few roads exist up here—just the gravel road that runs five or six miles to the Ballistic Missile Early Warning System facility and a much longer road, which is rarely passable anymore, that leads to an abandoned Loran station at Cape Atholl—so boats are the preferred means of travel for the researchers working here.

In its Cold War heyday, Thule Air Base employed several thousand military and civilian personnel. Bombers armed with nuclear weapons flew constantly, while others stood by in secret hangers as a deterrent to attacks by Soviet bombers coming over the Arctic Ocean. But satellite technology and guided missiles have made this base less important than it was in the past, and its footprint has been shrinking each year, as staff is moved out and barracks are demolished.

The High Arctic Institute is headquartered in a barracks that would probably have been demolished if The Peregrine Fund hadn't acquired it. And it's a wonderful place—warm, dry, and homey. When you push down the lever locking the eight-inch-thick front door, which resembles the door of a bank vault, you're about as protected from the elements as you can get at this frozen northern latitude.

BHL

Blank Page Digitally Inserted

In the afternoon, Bill and I climb Dundas Mountain to look for the pair of Peregrine Falcons that nests there each summer. For several years, this site has been regarded as the farthest north Peregrine Falcon nest in the Western Hemisphere and perhaps the world (though a few days later, in an exploratory trip north to Booth Sound, we find three more Peregrine Falcon nests that beat this latitude record). We climb up the back side of the rock while Jack and Kurt and Jim Enderson take the boat around front, along the cliffs, to see if they can spot the nest from below.

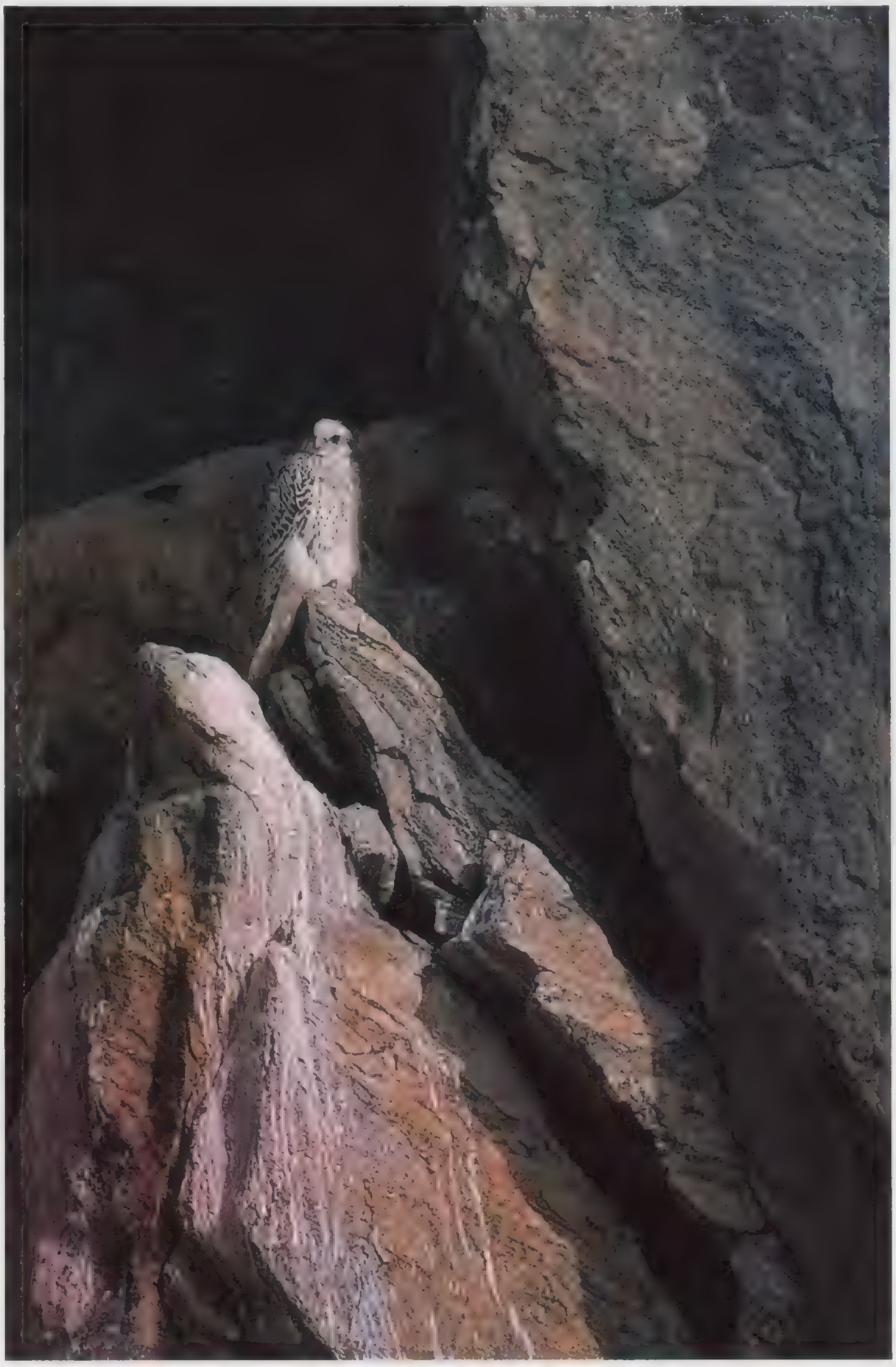
Dundas Mountain is a huge butte rising 1,000 feet above North Star Bay and is Thule Air Base's most distinctive landmark. It's also another steep, tough climb on broken, loose, jagged rock. (This time, though, I manage to carry my camera gear myself.) We walk around the entire top of Dundas Mountain and finally flush both birds on the air base side. I take some shots of the birds flying over the iceberg-filled water, but we don't stay long—peregrines nest much later than Gyrfalcons, and these birds probably have small young. We don't want to keep them off their nest long.

I photograph an ancient Inuit fertility statue—a huge, headless, limbless female torso carved of stone that faces out toward the open sea. I also photograph a memorial cairn for Knud Rasmussen erected on top of Dundas Mountain. In 1910, Rasmussen founded the trading post and village of Dundas at the base of the rock. He and his friend Peter Freuchen became major Arctic explorers, traveling by dogsled across the northernmost parts of Greenland and extending Danish rule to the entire area. Both men married Inuit women and lived their entire lives in Greenland.

Later I visit their village, which has changed little since they lived here, except that it is now a ghost town. When the Thule Air Base was constructed, in the early 1950s, the Danes built a new village for the Inuit and other inhabitants about 100 miles north of this one and moved them. This is an amazing place. So silent and peaceful. You'd never know that there's an air base just the other side of the hills. In the shadow of the neat frame houses lay earlier human traces: earthworks and the foundations of sod huts. Here on the shores of North Star Bay a human community thrived for centuries. And here, too, the great Robert Peary anchored many times on his Arctic explorations. Though history has been unkind to him, even doubting his achievement of reaching the North Pole and condemning him for exploiting the Inuit, it is he more than most of the other early explorers who has the respect of these people. He adopted their ways and used their techniques to achieve his accomplishments as an explorer.

As I stand there in the purple hue of a late summer night in the High Arctic of Greenland, I can't help thinking about the Inuit who once lived here, as well as Peary, Rasmussen, Freuchen, and all the other people from faraway lands who have been drawn to Greenland, again and again and again, as though they are addicted to the place. And I realize that this also applies to my friends at the High Arctic Institute—like Jack Stephens, who has lived at Thule Air Base for 27 years. Jack, an affable, good-natured Georgian, had been recently divorced and was living in Arizona when he saw an ad for one of the weather forecaster positions at the base. He jumped at the chance to come here and has never even thought about re-

To photograph the young white Gyrfalcon below, we had to scale the lofty sea cliff on the facing page, without the benefit of ropes, pitons, carabiners, ascenders, or other climbing aids.



From the top of a Peregrine Falcon nest cliff, Bill Burnham (above) confers via walkie-talkie with the boat far below, trying to pinpoint the exact location of the nest before rappelling to it.

turning to a stateside job. An avid wildlife photographer, Jack takes a leave each summer to work with Peregrine Fund researchers, accompanying them on all their explorations. In the winter, he lives alone at the High Arctic Institute, surrounded by his library-sized collection of books—ranging in topics from history and science to literature and the arts—and his vast collection of classical music CDs.

Then there's Kurt Burnham, who, though only 23 years old, has spent nine summers in Greenland. Earlier this year, he made a 200-mile journey by dogsled with an Inuit, searching for new Gyrfalcon nesting areas. The temperature hovered in the 50-below-zero range the entire time. He told me that his goal is to someday go to the North Pole by dogsled, as Peary did nearly a century earlier.

And finally there's Bill Burnham, one of the most determined and hard-driving people I've ever met. Several days after we climb Dundas Mountain, he goes back alone, carrying all the climbing gear with him. As he reaches the top of the cliff, Jim Enderson and I stand on the nearby pier at Thule Air Base, peering at the cliff with a spotting scope and talking with Bill via walkie-talkie, trying to help him locate the nest site. I watch him climb down the cliff and back up again three times before he finds the right ledge. Each climb is well over 100 feet, and he does it quickly to minimize bothering the birds.

A couple of weeks later, in Boise, Idaho, I speak with Bill Mattox, president of the Conservation Research Foundation, who had sent Bill Burnham on his first trip to Greenland in the early 1970s. (Mattox himself had first gone to Greenland in 1950 and had met Peter Freuchen.) He laughs when I tell him how hard it was to keep up with Bill when we were hiking overland or climbing cliffs. "Bill was always a real tundra burner," he says. As they were crossing massive expanses of Greenland tundra, he says Burnham would consistently walk 100 yards or more ahead of him and then stop, sit on a rock, and wait for Mattox to catch up. "As soon as I got there, he'd stand up and say, 'Well, we better get going now,'" he says, laughing.

Later in our conversation, Mattox gives me a knowing look and says, "You've got the bug; you'll go back to Greenland."

Could be. ■

To learn more about the work of the High Arctic Institute in Greenland, visit The Peregrine Fund's web site at <http://www.peregrinefund.org>. To view an amazing set of photographs of the Thule area, visit Jack Stephen's web site at <jackstephensimages.com>.

STEVE PANTLE

Study Wildlife Sound Recording With the Experts

Learn state-of-the-art techniques for recording wildlife sounds with experts from the Lab's famed Library of Natural Sounds. Our workshop runs from June 10–17, 2000, at San Francisco State University's (SFSU) Sierra Nevada Field Research Station in the Tahoe National Forest. The station, 6,000 feet up amid ponderosa and Jeffrey pines, affords a wide range of recording conditions in spectacular surroundings.

Topics covered include the selection and application of audio recorders and microphones, recording theory, metering, recording techniques, documentation for sound recordings, and an introduction to the use of microcomputer-based software to analyze recordings. The course includes daily field recording sessions and lecture/discussions.

Your $695 workshop fee includes tuition, class materials, ground transportation, food, and lodging. Accommodations are rustic but comfortable. Lodging will be tents on platforms (mattresses are provided); the main lodge houses dining and bathing facilities. A nonrefundable $100 deposit is required to reserve a space. Enrollment application and deposit must be received by April 10, 2000. **The balance is due by May 10.** Participation is limited to 20. Participants may register for two college credit hours, at $50 per unit hour, through SFSU's Biology Department. Payment for college credit is made to the Cornell Laboratory of Ornithology along with the enrollment fee.

For more details, contact the Library of Natural Sounds, Cornell Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca, NY 14850; phone: (607) 254–2404; fax (607) 254–2439; e-mail: libnatsounds@cornell.edu; or visit our web site at http://birds.cornell.edu/LNS. Participants should bring a tape recorder, microphone, and tape; those needing equipment should contact us as soon as possible because a limited amount of recording equipment is available on a first-come, first-served basis.

LARS JONSSON: A LIFE IN THE FIELD

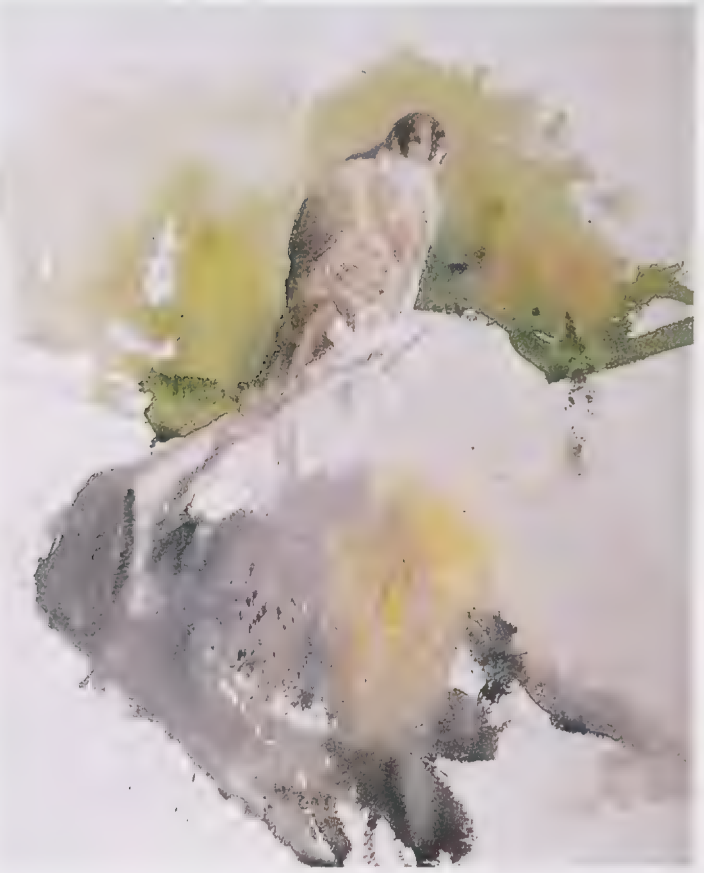
BY MARTHA HILL

An intimate portrait of Sweden's premiere bird artist

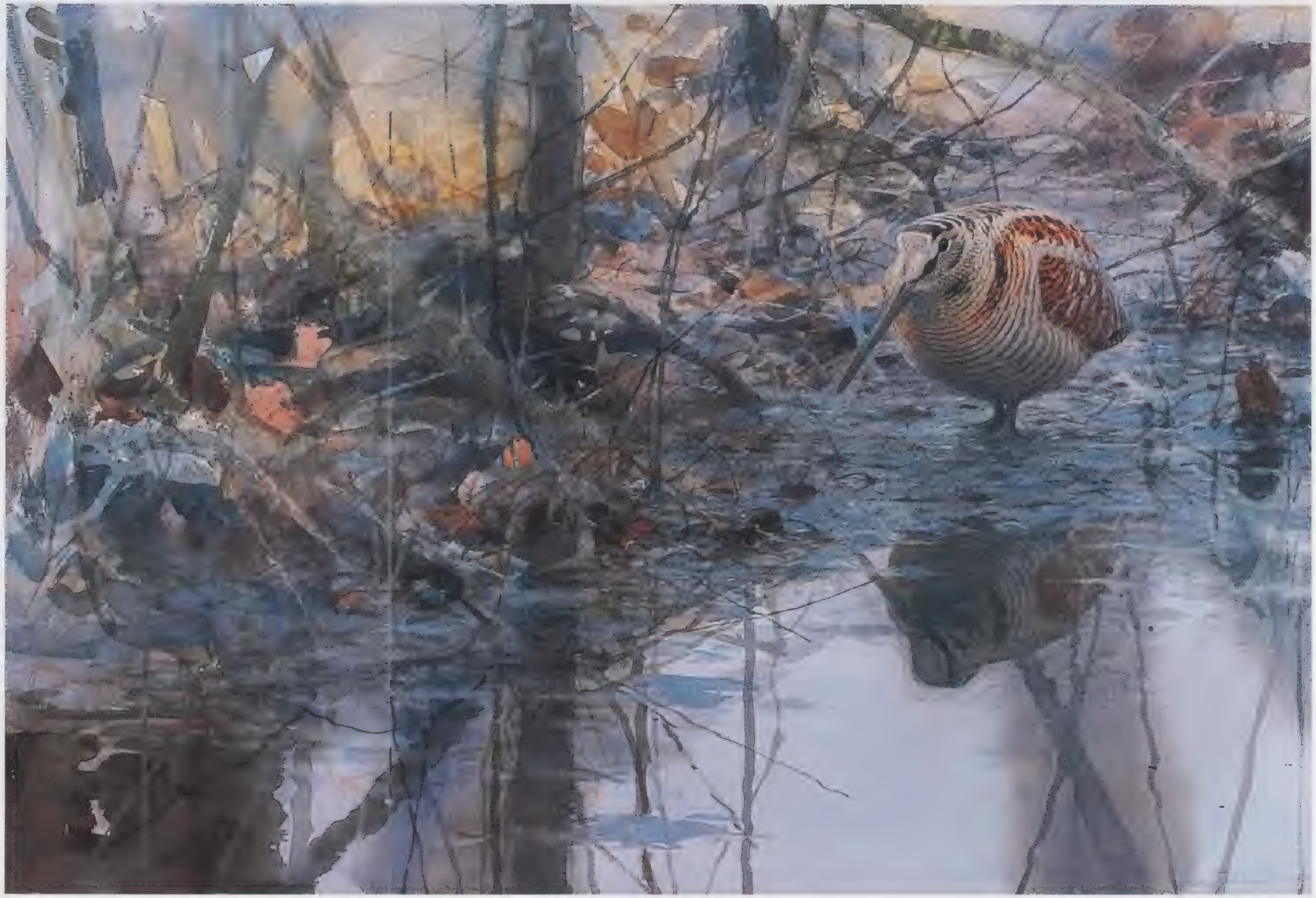
In the pearly light of postdawn, Lars Jonsson sits in his favorite spot, Stockviken—a bay on the southern end of Gotland, Sweden's largest island in the Baltic Sea. Sitting on the ground, his spotting scope set up within easy reach, he quickly sketches some European Golden-Plovers resting in the shallows. It is late August. Already the sun's warmth is penetrating the soft haze, and fall migrants abound.

Suddenly, the plovers take off. Alert, Lars looks around and spots a migrant Peregrine Falcon sitting on a boulder close to shore. Immediately resetting the scope, he begins a new sheet of paper, sketching the falcon, a one-year-old male. A few pencil strokes, then the watercolors, and instantly the sunny rock and the peregrine—his head slightly cocked, looking for quarry—take form and life. With effortless brushwork, Lars mixes colors, tests the tonal value, and builds his image in minutes. Then, true to nature, the falcon takes to the air, and the sketch must wait for another sitting, the details of the bird's face still not complete.

All the time Lars is absorbed in painting, he imparts details of his observation. This is a bird not yet completely in adult plumage. His breast still has streaks, not the fine barring of the adult, and he has a few brown feathers on the top of his otherwise slate-blue head. It is the first peregrine Lars has seen this season, and his excitement is infectious. Meanwhile, stints, ruffs, and snipe fly by, Lars identifying them each by call as he hears them, never taking his eyes off his work. He is a man completely in tune with his surroundings and enthralled with what he is doing.



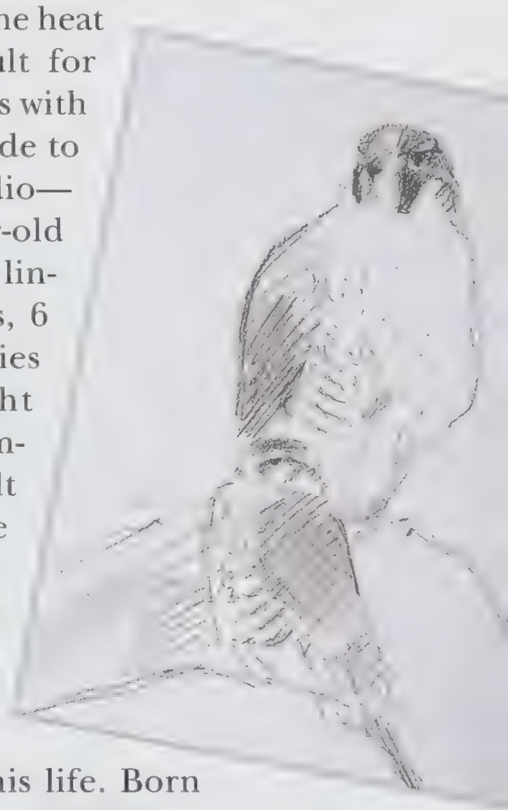
We scan for the peregrine—Lars knows the bird is hungry, and he doesn't want to miss its strike—but the falcon flies low along the water, and we lose sight of him behind some brush on a



When Lars spotted a Peregrine Falcon sitting on a nearby boulder, he immediately went to work sketching it—first with a few pencil strokes, then with watercolors. Within minutes, the image at left took shape. The Eurasian Woodcock (above) is a secretive bird with cryptic coloration, so Lars made the bird a subtle element in the composition. But the painting itself is dynamic because of the strong brushwork in the foliage and the bright mirrored surface of the water. It recreates vividly the experience of seeing this bird.

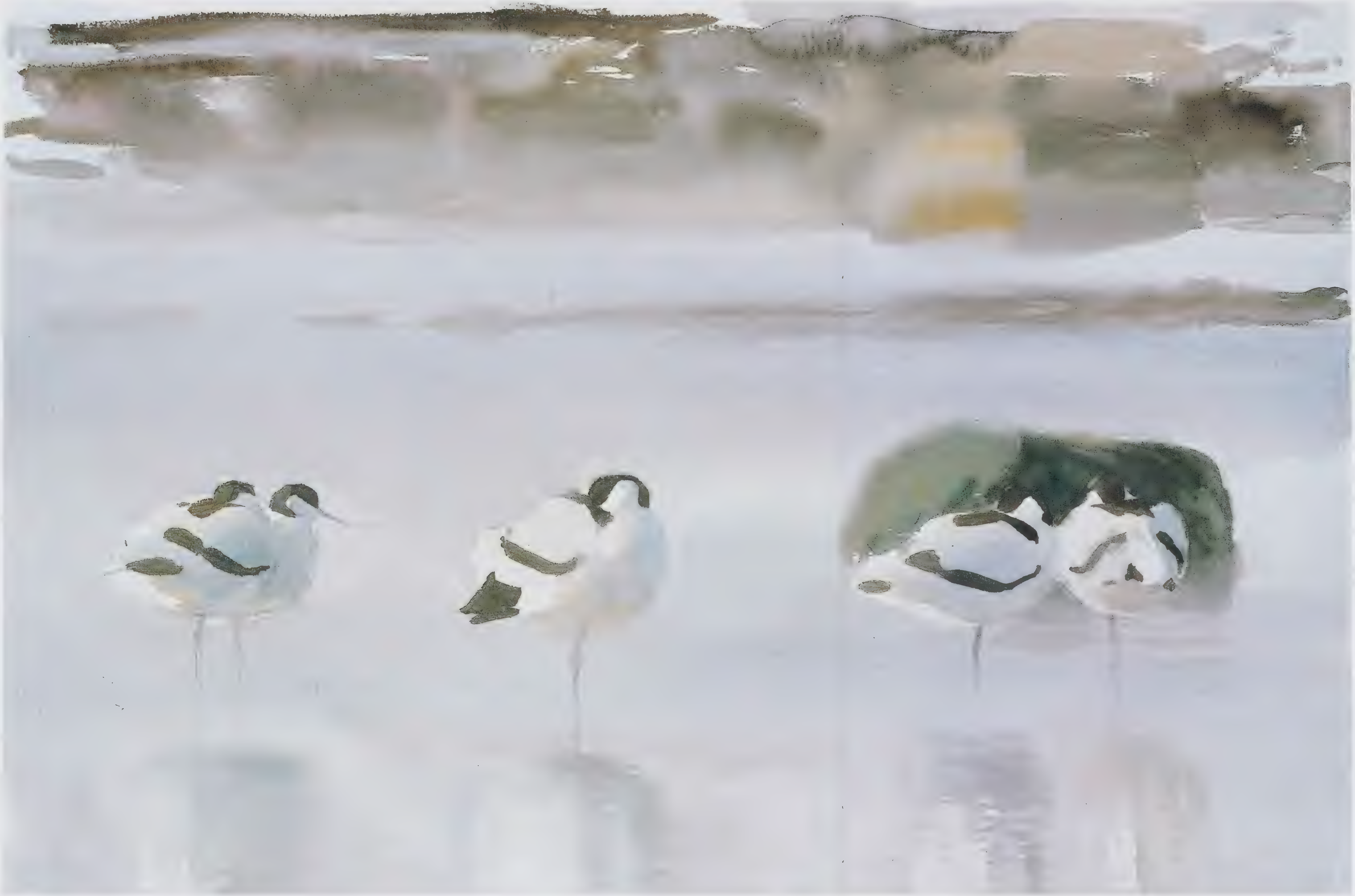
long sandbar. Later, we spot him again, on another boulder, plucking his meal. All at once, Lars exclaims, "Wow, I can't believe it! He's being hassled by a Merlin! I've never seen that before!" Then, even more astounding, the Merlin alights on the boulder immediately in front of the one where the peregrine is perched, so Lars has both birds in his scope together. He snatches another sheet of paper and starts sketching, telling us we will have to be witnesses so people won't think he made it up.

We have lost all track of time, and it is only when a herd of cattle comes down to the shore and surrounds us and the heat haze makes it difficult for Lars to scrutinize birds with his scope that we decide to head back to the studio—a converted 150-year-old stone barn. The door lintels are low, and Lars, 6 feet 7 inches tall, carries himself with a slight stoop, used to accommodating a world built for smaller folk. At age 47, he radiates the energy and enthusiasm of a boy.



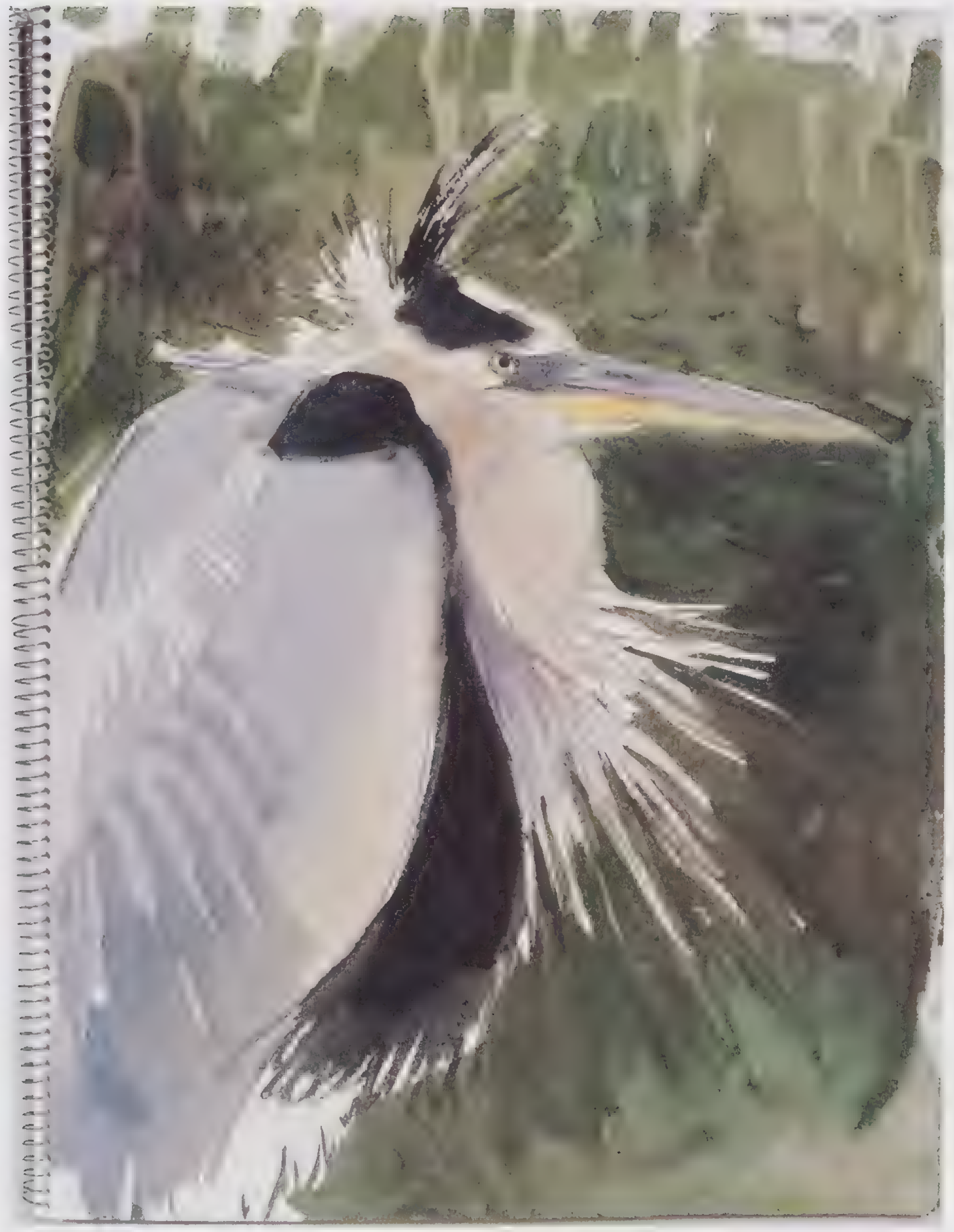
This obsession with drawing birds manifested itself early in his life. Born in Stockholm, Sweden, in 1952, Lars completed his first bird drawing, a Great Crested Grebe, at age five. At nine, he submitted another bird drawing to a children's competition, but it was rejected—the judges believed it was too sophisticated to have been done by a child. Swedish schools provide a work-study opportunity for 14-year-olds, and Lars was fortunate to end up at a natural history museum. There, he drew the stuffed birds on display from every angle and perspective.

He was discovered at this activity one day by the director of the National Museum of Natural History, who was accompanied by the head of his exhibits department. The two men were astounded by what they saw, prompting them to host the first one-man show of Lars's bird drawings, in 1968, when he was only 15 years old. Gunnar Brusewitz, a fellow wildlife artist and colleague of the previous generation, attended his debut. Recollecting that exhibit, he wrote: "I felt giddy seeing how a fifteen-year-old boy had cleared technical hurdles most bird painters struggle with all their lives. Such a sure hand and mature eye amazed us veterans. It was a new way of drawing birds—unconventional, fresh, and personal."



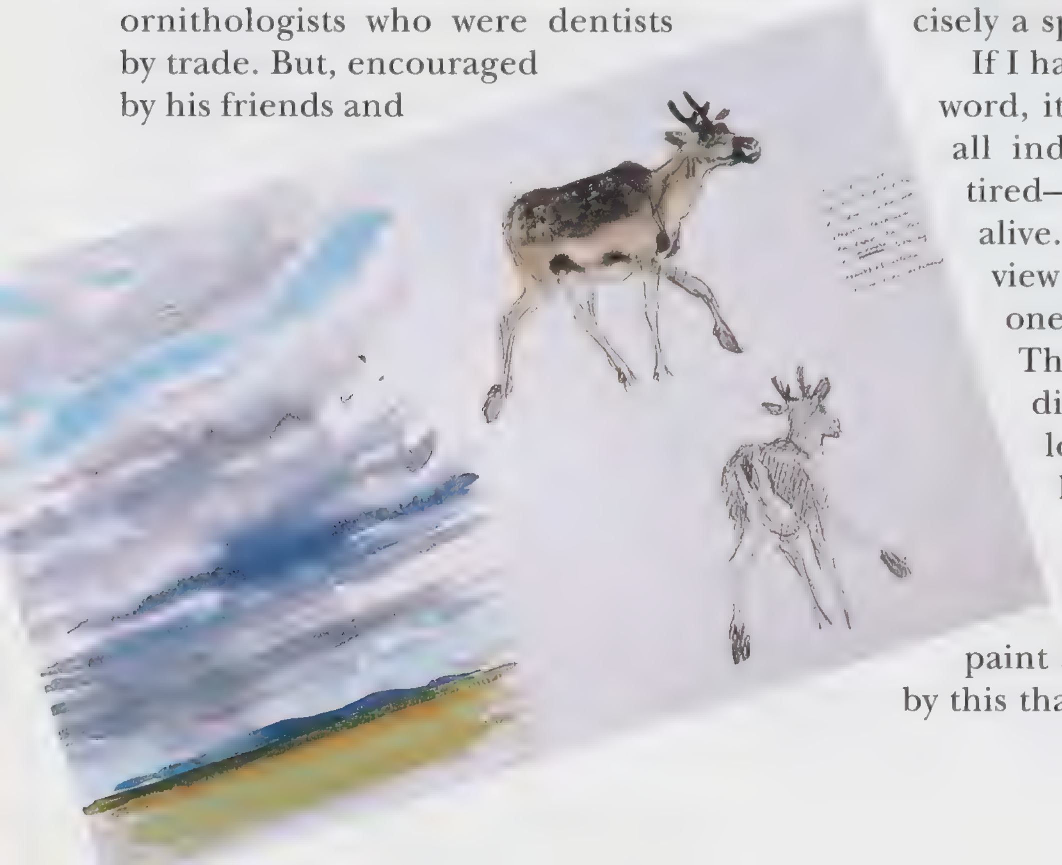
"Every picture is, of course, an attempt to capture something that touches me, to express more precisely a spontaneous impression."

When Lars next spotted the peregrine shown on page 24, it was being harassed by a Merlin, which then, amazingly, landed on a boulder in front of the larger bird. Snatching another sheet of paper, Lars sketched the scene quickly in pencil (at right). Jonsson's watercolor of a group of Avocets (above) was one of the paintings exhibited at the Tryon Gallery in London in 1987—his first major one-man show outside Sweden.



Already a member of the Young Field Biologists' Society, Lars had been recording his impressions of bird life and illustrating his own articles. With money earned from sales of his drawings, he set off for the Faroe Islands for five weeks of wet camping and bird study. His observations and sketches were subsequently published in *Field Biologist*, the society's journal.

Still unsure he could make a living with his art, Lars toyed briefly with the idea of becoming a dentist, because he knew several Swedish ornithologists who were dentists by trade. But, encouraged by his friends and family, he persevered. Art school was not, however, in the cards. Lars applied to the Royal Academy of Art in Stockholm, but he was not accepted. Undaunted, he took off for North Africa with his brother, Anders, and some friends in a Volkswagen camper. Binoculars and sketchbook became his daily companions. This trip was followed by many others, as Lars chased his subjects on their migrations from Europe southward.



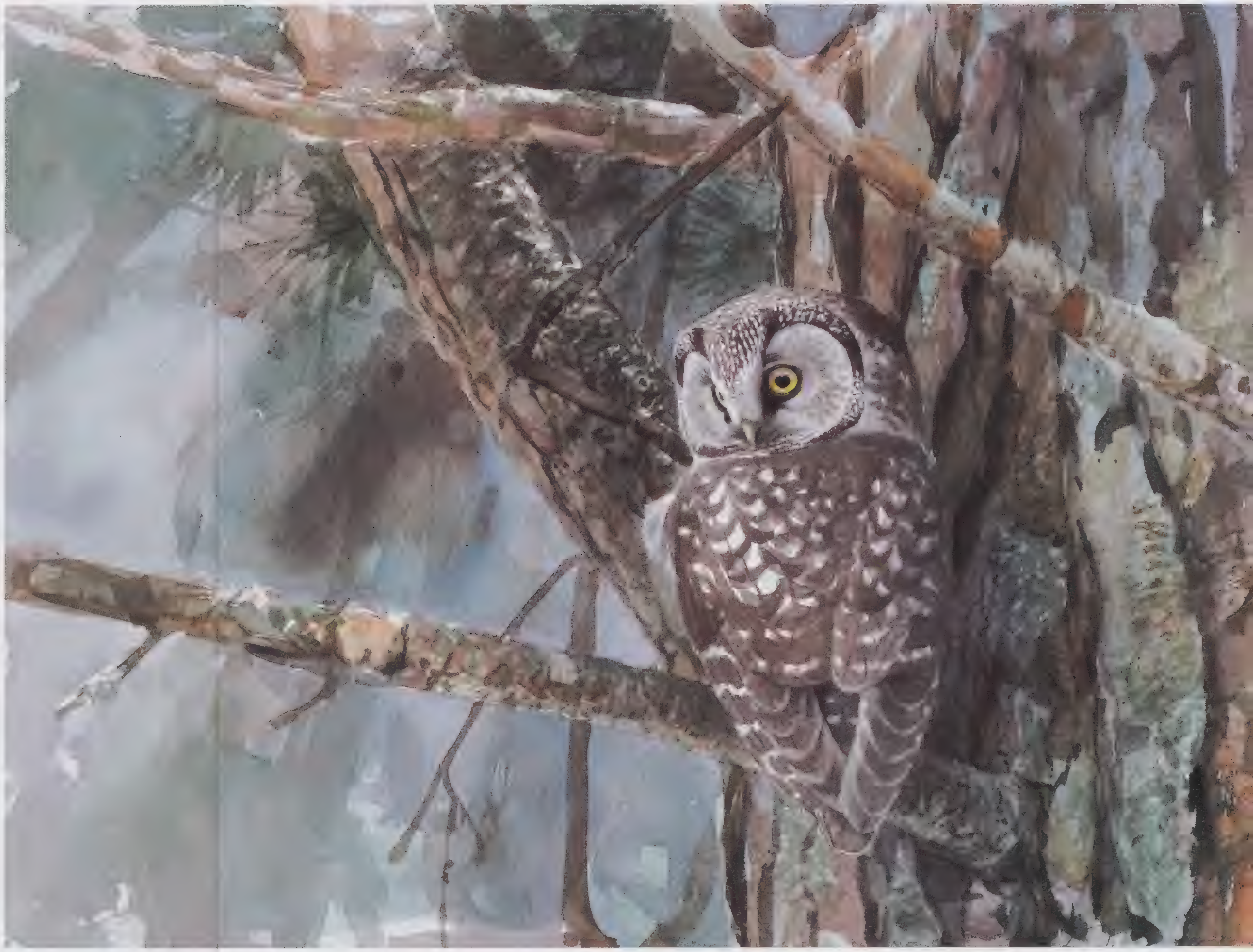
Small wonder, then, that when Swedish publisher Wahlstrom and Widstrand was looking for someone to create a new ecological field guide to Europe's avifauna, it approached Lars. For the next decade, as Lars wrote and illustrated the five volumes, this project became the crucible that deepened his understanding and annealed his ethic of field work. The result was a best-selling work translated into seven languages and still considered the favorite of many birders.

After the constraints of illustrating a major field guide project, Lars needed to purge his system. He went to Spain for three months to paint with abandon. And this he did, painting subjects ranging from garbage-scrounging cats to herons amid bogs in bloom. "I have always been upset over environmental destruction of any sort and would like my art to convey that message. But it is difficult. I worship beauty and avoid painting ugliness. Even when I painted the starving cats, despite my intention, I turned them into an aesthetic experience. Every picture is, of course, an attempt to capture something that touches me, to express more precisely a spontaneous impression."

If I had to characterize Lars's work in one word, it would be "intimacy." His birds are all individuals—perky, cautious, hungry, tired—doing what they must do to stay alive. It is a close-up view, a bird's-eye view, very personal, like peeking through one-way glass, seeing without being seen. This quality makes his bird portraits different and exciting. In this, he follows legitimately in the footsteps of his fellow Swede, the great Bruno Liljefors, albeit a century later.

Describing his work once to a journalist, Liljefors said simply: "I paint animal portraits." He did not mean by this that he painted large heads of animals staring out at the viewer, but that he painted his subjects as individuals, as the characters he knew them to be. In this, he was the first to depict animals honestly, not as other painters did—sentimentally or anthropomorphically, animals reflected by the eye of man. He rendered the animal's own point of view, unfiltered by human perceptions. Liljefors's creatures inhabit their own world, have their own motivations for what they do, and examine us or not, as they need to or don't need to. When looking at a Liljefors, you feel as though you've been invited to share a private moment in the life of that animal. You get the same feeling looking at a Jonsson.

This dramatic watercolor study of a Grey Heron (above left) is very loose and abstract, with just enough detail to reveal the total character of the subject. Lars sketched the caribou study (left) during an expedition to Siberia.



The revealing portrait of a Boreal Owl (above) captures the essence of the bird, providing just enough habitat to give a sense of place and calculated use of darks versus lights to heighten the drama of a surprise meeting.

Although he was definitely influenced by Liljefors, Lars brings his own unique approach to his subjects. What contributes to the intimacy of his view—and also sets Lars apart from many of his contemporaries—is that he paints, like Liljefors, what he finds on his doorstep, in his backyard, and on the mudflats near his home. And like Henry David Thoreau, who was proud that he had "traveled widely in Concord," Lars continues to delve deeper into his local avifauna for inspiration. "It takes time to develop understanding," he says, "before you can capture the essence of an animal, bird, or landscape and communicate its soul to someone else." His shelves of sketchbooks and drawers of watercolor studies reveal the growth and depth of his continued quest for the nuances that make each subject an individual.

Lars has absorbed the Liljefors legacy well, in part because he feels the same humbling wonder that there is so much we still don't understand about creatures and what they think and feel. This sensitivity and respect is something you are born with, and it certainly comes through in his work. I feel it most strongly in his watercolor studies. His birds are content, upset, nervous, tired, depending on where they are in their lives. His falcon that morning was hungry and tense—alert to all potential prey. Lars captured its mood in the pose.

The sensitivity may well be innate, but the ability to record it is not. The skill that brings a subject to life on paper is the result of years of practice. It is trained by years of observation and rapid response with a pencil or brush. As Lars points out, it is important to keep renewing your acquaintance with the natural world. "The challenge is to paint what you see, not what you think you see. When we think we know a subject well, we rely on what we know and not what we observe." Not for him the projecting of photographs onto a canvas to be filled in with paint, a habit many lazier artists have fallen into. If Lars has any comment on the differences between European and American painters, it is that Americans "focus more on presentation than on content. What tends to get lost in their slavish attention to detail is the artist's personal message, his feelings about his subject."

Still, Lars readily admires and respects the work of several American painters, including Larry McQueen, Robert Verity Clem, Larry Barth, and Tony Angell. He has become acquainted with most of them through his participation each year in the "Birds in Art" show at the Leigh Yawkey Woodson Art Museum in Wausau, Wisconsin. He first submitted work to this prestigious annual show in 1983. Five years later, the museum conferred its "Master Artist" designation on him. At the time, he was the youngest artist ever to be so honored, although not the first Swede. Sculptor Kent Ullberg enjoyed that privilege a year earlier.

As Gunnar Brusewitz noted, "Lars's work was a breath of fresh air next to the photographic style so much favored by American bird painters"—what the late Don Malick used to call "avian needlepoint." Slavishly replicating nature is not art. As Goethe once said, "If you paint a pug dog as true to nature as possible, you have enriched the world with a new pug dog, but hardly a new work of art." As Lars contends, "Being true to nature is important. It is a departure point, part of the ongoing dialogue of the artist with his surroundings."

The central problem, in all realistic art, is to make the subject seem alive and have the people viewing it connect emotionally with it. Most artists today rely on photography for much of their reference material—commercial illustrators have done this for years, of necessity. But photographs are a two-dimensional representation of our three-dimensional world. If you have had lots of practice drawing subjects from life, then it is easier to fill in the gaps of visual information a photograph leaves out.

No shortcut exists for gaining this visual understanding. Drawing the subject from life is the artist's only real way to understand form and what light does to form. Drawing (or painting) directly from the subject makes the all-important creative connection from eye to brain to hand. Once a subject has been explored and summarized in this way, that knowledge is imprinted in the visual storehouse for later recall.

What is much harder for an artist to retain, whether he is transferring an image to a print medium or creating a large oil painting based on a small watercolor sketch, is the fresh, spontaneous feeling of encountering the subject for the first time. The first impression, whether it is a drawing or a watercolor study, has the immediacy of the artist's vision and his emotional response. If it is good, it also captures the essence of the subject's character. To recreate that in a different format, medium, or composition is the great challenge of every artist.

Lars, like all artists, struggles with this conundrum, but he has built an intimate knowledge of his subjects from his many years of

One feature that characterizes Lars Jonsson's work is the intimacy of his bird portraits, as shown in the oil painting of the European Avocet with chicks (left) and the watercolor of a Meadow Pipit (above). His paintings provide a close-up, highly personal view, like peeking through one-way glass.

KEVIN SCHAFER

Lars Jonsson sits on the shore at his favorite spot, Stockviken. He spends countless hours each year in this and other bird-rich areas, creating lightning-fast sketches from life of the birds he sees. Lars believes that drawing subjects from life is the best way to gain a strong visual understanding of form and what light does to form.

> *"The challenge is to paint what you see, not what you think you see. When we think we know a subject well, we rely on what we know and not what we observe."*

drawing them in the field. Among his preferred subjects are groupings of sitting or standing birds. "I like their balanced forms. When they flock together, they create a 'room' within the air that surrounds them," he says. The birds he paints are often in between places: "They fly in, rest, move on, but for a moment, they become part of their surroundings, the shore which becomes the shoreline, where it is hard to tell sometimes what is water and what is air, what is sky or the reflection of the sky. Where all these elements meet and contact each other, that is what intrigues me."

"Liljefors," Lars explains, "was intrigued by the great drama of the struggle to survive, and some of his paintings have a lot of action. But if you want to portray the character of a goshawk, what is the more typical behavior? I'm more interested in the hunter who spends ninety-nine percent of his time sitting versus one percent of his time hunting. The essence of the chase is in patience. I like the potential implied in that, the feeling that in the next moment he might strike—the suspense of something about to happen."

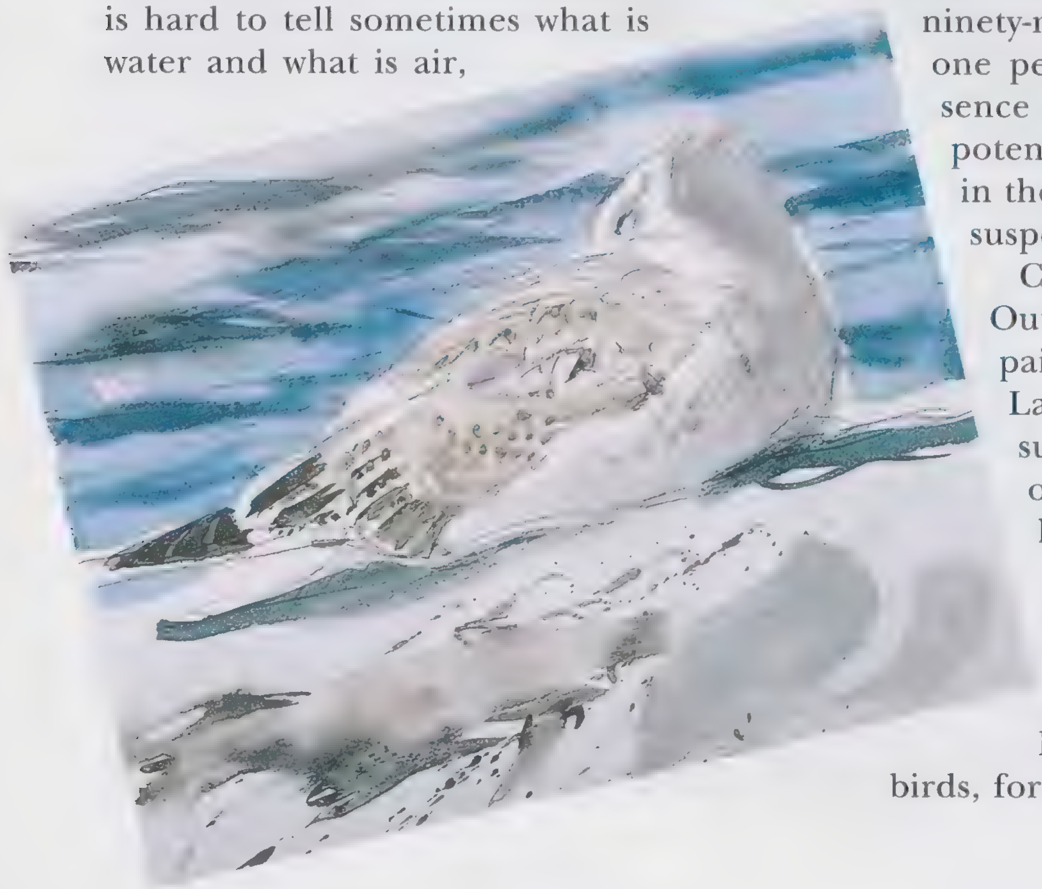
Currently, his favorite subjects are gulls. Out in the field, as we watched him deftly paint a sleeping young Herring Gull, Lars explained his fascination: "This is such a common bird that most people overlook it. Yet what appeals to me is his potential. He is waiting his turn, conserving his energy for bigger things." The result is painterly, loose—an economy of statement with powerful impact.

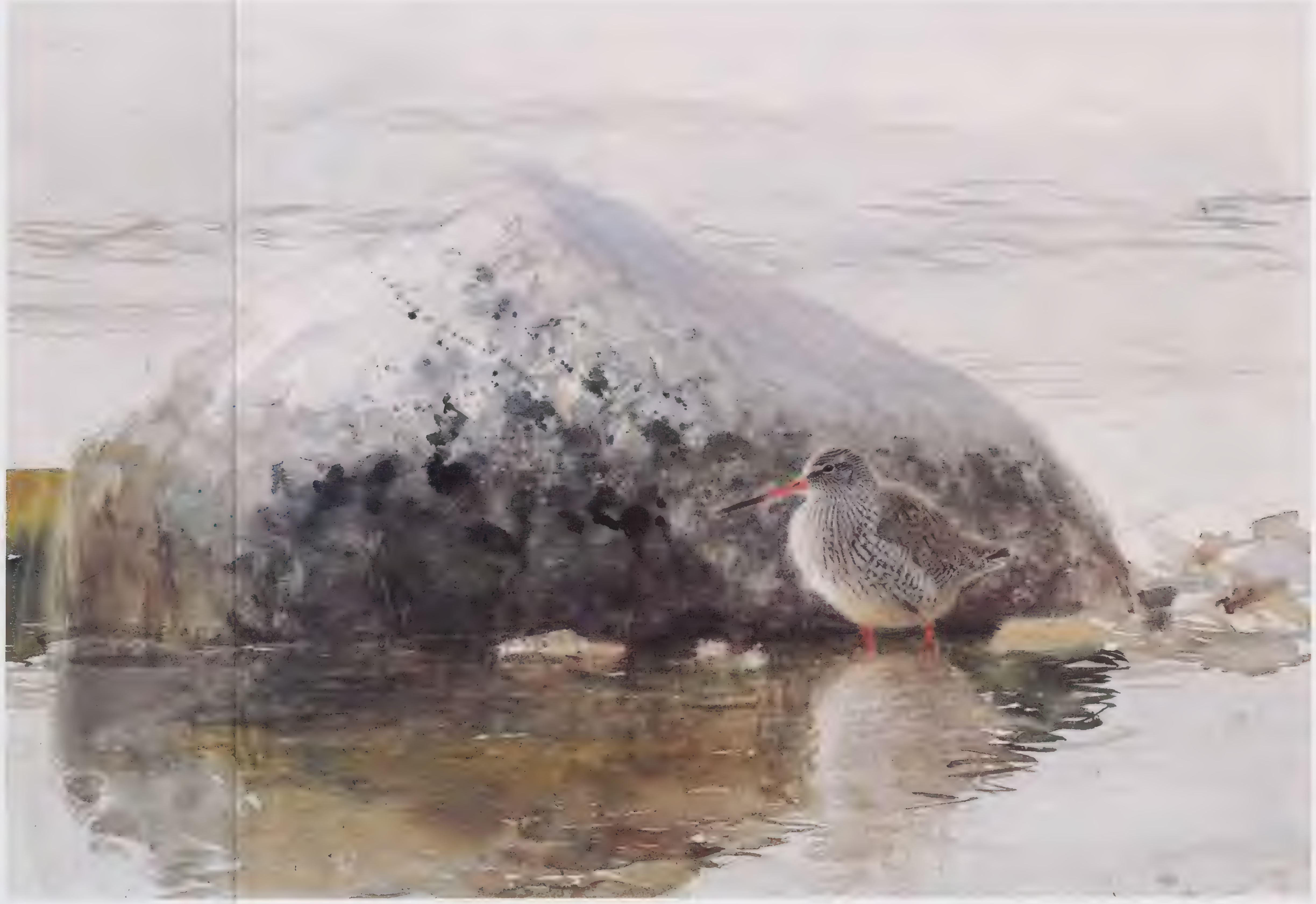
Lars's close scrutiny of gulls (and all birds, for that matter) is not just as an artist, but as a scientist, too. A dedicated ornithologist, he is involved in sorting out the complicated genetic relationships of Europe's yellow-legged gull species, including collecting blood samples for DNA analysis. He has published articles on the subject and has more planned. On a recent Siberian polar expedition, Lars participated both as an artist and a scientist. While the two interests feed each other, they also play tug of war with his time.

Back in his studio, huge oil canvases—some as large as 11 feet wide by 6 feet high—sit on the floor or on easels, in different stages, awaiting completion. What is striking about the oils is their flattened perspective, a direct result of Lars using a telescope when he draws in the field. Because the perspective is foreshortened by the high magnification, the birds tend to sit on the front plane. The result, in this enlarged format, is an almost confrontational experience with the birds.

Lars is pressed for time. In a couple of weeks, he must have a dozen canvases and an equal number of watercolors finished and framed for a solo exhibition in Brussels, Belgium. What started as a simple show, suggested by a friend in Europe's new political center, has turned out to be a gala affair hosted by Swedish royalty and the Swedish Ambassador to Belgium. The oils, though large, are more forgiving. They can be worked and reworked, which watercolors cannot. And, like Liljefors, Lars paints thinly on the canvas, often with white showing through—a holdover of painting in watercolor.

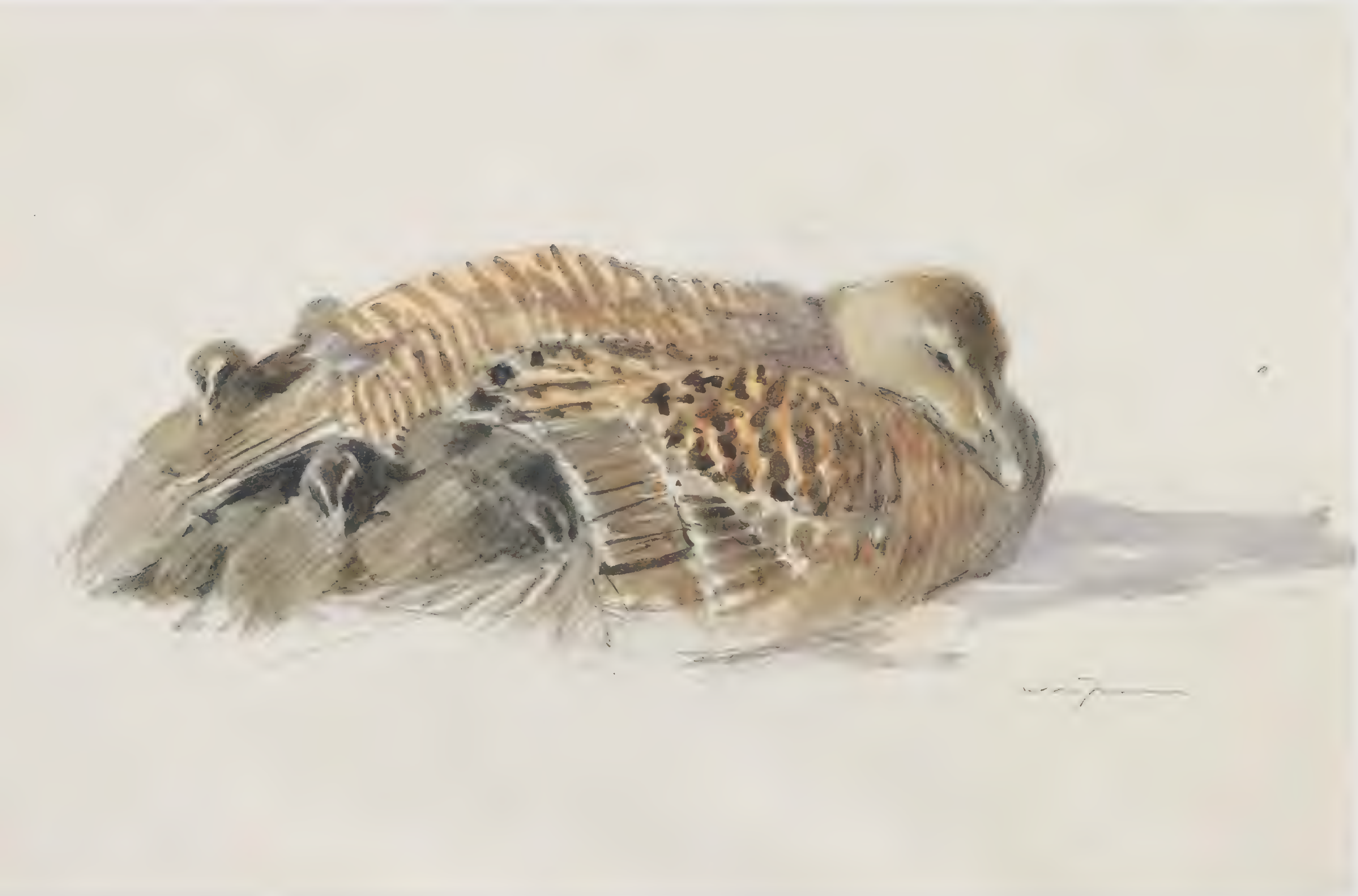
Also in the final stages of color correction are 12 new chromolithographic prints for the same exhibition—a special millennium collection





Lars deftly painted the sleeping Herring Gull (at left) in minutes as the author sat beside him. The watercolor of a Redshank (above) is a lovely study of a soft bird form contrasted with a hard boulder—at the shoreline meeting area of bird and water that Lars finds endlessly inspiring.

Blank Page Digitally Inserted



This watercolor of a Common Eider with chicks is a perfect example of the intimacy you feel in a Lars Jonsson bird portrait. The hen eider is completely intent on her young, protective and doting, as they snuggle to her for safety and warmth.

representing bird life during the calendar year. Some of them may have as many as 15 different color screens before Lars is satisfied with the final result. He must create each of the screens himself, a laborious process of painting on Mylar with a black pigment. The amount of color printed by each single screen is controlled by the differing shades of gray—black representing the darkest saturation and white representing no color.

Some years ago, Lars was represented in the United States by Mill Pond Press. But his loose, painterly style was not a good fit with their preference for a tight, realistic style. Not satisfied to have prints made that were merely photographic reproductions of his paintings, Lars found that the chromolithographic process suited him better. Now, he self-publishes and his editions number about 350. He creates each print from an original painting he likes, sometimes making subtle changes in composition along the way. But all the color judgments are his alone, and each screen is created by his own hand, so the process is more honest.

Lars has two new book projects in progress. The first, entitled *A Day in May*, will be a painter's diary, exploring his subjects under different lighting conditions. It is similar in feel to his earlier book, *Bird Island: Pictures from a Shoal of Sand*. In the latter, Lars dealt with the transitory nature of life on a tenuous bit of tidal shore. In the new book, Lars will also include oil paintings among the illustrations, in part because he is taking canvases outdoors more and more to paint what he finds. The other book he is working on is about the Russian tundra. A labor of love for several years, he hopes to complete it next year. As with everything he does, these book ideas spring from his field work and keen observations. They will be intimate and personal but also universal in scope, as is nature herself—mutable and immutable—all at the same time. ■

Martha Hill is the author of Bruno Liljefors: The Peerless Eye, *the definitive English-language biography of the artist. She was picture editor at* Audubon *magazine for more than a decade.*

We wish to thank Virginia Brattstrom De Young for translating materials from Swedish to English that were used in researching this article and Kevin Schafer for photographing Lars Jonsson's paintings.

BINOCULARS AND SPOTTING SCOPES

EAGLE OPTICS *RANGERS* - BINOCULARS FOR BIRDERS

Our Exclusive Phase-Corrected *Ranger* Binoculars are now available!

Waterproof/Fogproof
Rubber Armored
Exceptionally Lightweight
Fully Multi-coated Lenses
Extremely Close Focusing
Long Eye Relief
Lifetime Warranty
Everything you've always wanted in a premium binocular for less!

Authorized U.S. Dealer for:
Leica, Swarovski, Zeiss, Swift, Nikon, Celestron, Bausch & Lomb, Kowa, Questar, Tele Vue, Pentax, Canon, Meade, Steiner, Leupold, Bushnell, Minox, Burris, Fujinon, Eagle Optics, Bogen, Velbon, Brunton, ITT

Get the best information, advice *and* value from Birders who know: Birds, Birders, Birding and Birding Equipment. We've built a nation-wide reputation on offering birders the best in selection, service and prices on quality optic products. Let our courteous and knowledgeable sales staff gladly assist you in selecting from our complete and extensive inventory.

Call for your FREE Comprehensive Optic Buying Guide & Discount Price List on optics from all major manufacturers

EAGLE OPTICS ☎ *(800) 289-1132*

**2120 W. Greenview Dr. #4
Middleton, WI 53562
608-836-7172
fax: (608) 836-4416
earnest1@eagleoptics.com**

www.eagleoptics.com

The Sapsucker Woods Society

GREAT EGRETS BY CLIFF BEITTEL

You can turn a simple plan for your future into an investment for the birds. A planned gift in the form of a bequest or life income agreement is an ideal way to plan for your future, to retain real benefits for yourself, and to enhance the Lab of Ornithology's efforts in bird research and conservation. Lab friends who take advantage of this special investment opportunity will become charter members of the exclusive Sapsucker Woods Society.

For more details, contact Scott Sutcliffe, associate director, Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Phone: (607) 254-2424; e-mail: sas10@cornell.edu.

Cornell Lab of Ornithology
Visit our web site at <http://birds.cornell.edu>

BIRDS WITHOUT BORDERS

BY KRISTI G. STREIFFERT
PHOTOGRAPHS BY TOM STREIFFERT

New international initiatives seek to preserve vital stopover areas for migrating birds

The boatman cut the motor and used a long pole to push the small boat closer to the birds. Reddish Egrets, Brown Pelicans, and a surprising Red-footed Booby paid little attention as my husband and I whispered identifications to each other. The Magnificent Frigatebirds, white morph Great Blue Herons, and Little Blue Herons also regarded us nonchalantly.

The boatman's partner, who'd driven us from our hotel in Cancun, Mexico, to Yum-Balam Biosphere Reserve on the northern tip of the Yucatan Peninsula, spoke very little English. I handed him my binoculars and signaled for him to look at the birds. After he raised the binoculars to his eyes, he gasped and, in perfect English, said "WOW!"

The big birds do wow locals and visitors alike, but these barrier islands and wetlands that rim the Gulf of Mexico harbor more than just egrets, herons, and frigatebirds. Although many parcels of coastal land may originally have been set aside for the larger "eye candy" birds that delight tourists—Greater Flamingos are common here, along with Roseate Spoonbills—this endangered habitat provides vital resting and refueling areas for millions of migrating shorebirds, waterfowl, and passerines.

On the western edge of the Yucatan Peninsula, local conservationist and birding guide David Bacab keeps track of the migrants that use the Celestún Biosphere Reserve. "On the salt ponds, salt marshes, and beaches, I find the shorebirds that pass through—Pectoral Sandpipers, White-rumped Sandpipers, Upland Sandpipers, American Golden-Plovers, Wilson's Phalaropes, and American Avocets."

This 25-kilometer-long estuary near Yucatan's capital city was set aside in 1979, because it is an important feeding area for flamingos. But local conservationists know there is more to an ecosystem than just its most famous "user."

"We also see migrating songbirds like Indigo Buntings, Scarlet Tanagers, Summer Tanagers, Blue Grosbeaks, and more, that make landfall in Celestún's sand dune vegetation and then move on the next day," says Bacab. "And a few waterfowl pass by, too—including Blue-winged Teals and Northern Shovelers."

Indeed, biologists have documented more than 200 species of birds that use the rim of land around the Gulf of Mexico as a way station and launch pad. No one has been able to estimate accurately the volume of birds fanning out over the 600-mile-wide Gulf each autumn and spring, but biologists estimate that the number could run as high as six billion.

Development along the Gulf Coast, in the United States and Mexico, is diminishing the quality and amount of vital stopover habitat needed by migratory birds, such as the Hooded Warbler, at left. Above, the village of Celestún, gateway to a wonderful biosphere preserve in the Yucatan, could face major development without international support.

ARTHUR MORRIS/BIRDS AS ART

Of course, the U.S. side of the equation is better known to American birders. I remember my first visit to High Island, Texas—that famed spring migration hotspot—in the late 1980s. Everywhere I turned in that venerable few acres of oak, I saw a life bird: Summer Tanager, Cerulean Warbler, Rose-breasted Grosbeak. . . . Hundreds of warblers, flycatchers, and cuckoos were resting after a harrowing Gulf of Mexico crossing. I don't remember giving a thought to the fact that these birds needed similar resting habitat in Central America to sustain them on their migrations or that massive development along the Gulf Coast might eventually lead to a downward spiral in their numbers. I don't remember thinking much about the mechanics of migration at all; I was too caught up in the wonder of it.

"The understanding of the need for stopover habitat has evolved in recent years," says Cecilia Riley, executive director of the Gulf Coast Bird Observatory in Lake Jackson, Texas. "Biologists on each side of the Gulf have known independently that both U.S. and Mexican stopover sites are used by the birds, but conservationists have just recently begun to work across international and political boundaries."

Crossing those boundaries is the goal of a new collaborative project called Gulf Crossings. The Gulf Coast Bird Observatory is working with The Nature Conservancy's "Wings of

Fortunately, conservationists have begun working together, across political boundaries. One collaborative project called "Gulf Crossings" seeks to raise awareness of the issue of habitat loss in stopover areas and help local site partners, such as the Celestún Biosphere Reserve, to start meaningful conservation programs.

BHL

Blank Page Digitally Inserted

Although the 25-kilometer-long estuary at Celestún was set aside in 1979 as a feeding area for the glamorous Greater Flamingos that frequent the area, local conservationists have long known how important the habitat is to thousands of shorebirds, songbirds, waterfowl, and other Gulf Coast migrants. Local conservationist and birding guide David Bacab explains to visitors the importance of preserving the bird-rich habitat at Celestún.

the Americas," Pronatura Peninsula de Yucatan, and matching-fund donors such as Canon to support 20 site partners in five U.S. and five Mexican states. The goal is to raise awareness of the loss of stopover habitat and to help the local site partners initiate conservation programs.

One of those U.S. partners has been struggling to protect a small remnant of maritime forest since 1953, when development of Dauphin Island, Alabama, began an irrevocable press to "progress." Less than 200 acres of forest—longleaf and slash pine, along with southern magnolia, live oak, and tupelo gum—were set side in the late 1950s, but the property continued to tempt developers until 1967, when the National Audubon Society made the area one of its official sanctuaries. The sanctuary's protected forest on the island serves as the migrating birds' first landfall after the spring Gulf crossing and the final feeding station each fall.

Each of the Gulf Coast Bird Observatory partners—from Dauphin Island to the small coral island preserve near Puerto Progreso, Yucatan, to the Rancho Rincon de Anacahuitas along the shores of the Laguna Madre near Matamoros, Mexico—is committed to the same goal: keeping a few more acres intact and undeveloped for the birds.

And a good thing, too. Recent declines in migratory bird species have frightened scientists, because they weren't sure what was causing the declines. Although the destruction or fragmentation of forests in birds' breeding or wintering grounds received the most attention initially, more recently, according to Mary Deinlien at the Smithsonian Migratory Bird Center (SMBC), researchers have turned their attention to the need to preserve vital stop-

over areas birds rely on during migration. "For birds that make the minimum 18-hour flight over the water, the coastal woodlands and barrier islands along the Gulf Coast offer the first landfall. This coastal area therefore contains key stopover sites for many migrants," she says in her "Travel Alert for Migratory Birds" on the SMBC web site.

She cites University of Southern Mississippi research showing that in the spring, birds are tyrannized by the weather, and their dependence on stopover sites varies greatly with conditions. "If the winds are from the south and the weather is calm as the birds reach the coast, most of them will continue flying farther inland, if they have sufficient fat reserves. Those that promptly stop in the coastal forests under such fair wind and weather conditions do so because they are running out of steam, i.e., fat. When winds are from the north or there are thunderstorms in the area, most birds, whatever their fat levels, are forced to land along the coast," she says.

Nancy Jo Craig, director of The Nature Conservancy's "Wings of the Americas" program, says researchers are finding that although the coastal barrier islands and forests are important during bad weather, river bottomlands away from the coast are just as important for migrating birds as they work their way north. "Radar research at Clemson University's Radar Ornithology Laboratory is showing important migration stopover areas farther inland as well," she says.

It's frustrating to consider that the birds must compete for this vital habitat with another species that prefers coastal habitat—*Homo sapiens.* "The narrow stretches of coast are home to a rapidly rising human population," says Riley. "Almost 60 percent of the world's people live within 60 kilometers of the sea, and this number is projected to keep rising." In addition to providing living space for people, she says, coasts are centers for shipping and business.

In the Yucatan fishing village that serves as a gateway to the Celestún Biosphere Reserve, David Bacab sees two dangers to the habitat surrounding the village: development for tourism and encroachment on public land by local people. He fears not only the prospect of large resorts being built in Celestún but smaller projects as well. "I know that a new hotel with 60 rooms is planned for this year, and [vacation homes] are being built, too," he says. "Americans are very interested in the cheap land right in front of the beach. Secondly, Celestún's people are also overtaking the salt ponds used by shore-

Preserving habitat is good not only for migrants but for local breeding birds as well. Above, a young pelican at the Yucatan's Yum-Balam Biosphere Reserve.

birds; they fill them up with garbage, cover them with sand, and then build their houses. The population is increasing very fast."

Gulf Crossings is working to address these concerns in both the United States and Mexico, according to Cecilia Riley. "This is just our first year of funding for this program and we are already working on it. In Celestún and the nearby Ria Lagartos Biosphere Reserve, we want to do landowner outreach to promote managing private properties for the birds. We want to communicate the basics of environmental protection and the positive economics of birding and ecotourism."

In another initiative, a partnership of conservation organizations is providing training courses to local fishermen (above) so that they can work as naturalist guides, taking tourists out in their boats in the off season for fishing. Below, Magnificent Frigatebirds at Yum-Balam Biosphere Reserve.

"We need to organize soon," says Bacab. "It seems easy, but let me tell you, it is not. People here in the village still do not understand conservation—what it is to protect land."

One program that addresses the economics of ecotourism and communicates conservation ethics to villagers has been evolving since 1997. A partnership of conservation organizations (Rare Center for Tropical Conservation, Amigos De Sian Ka'an, and Pronatura Peninsula de Yucatan) is providing three-month courses that train fishermen to work as naturalist guides during the off season. So far, 41 fishermen (and a few other tourism-oriented business owners) in the fishing villages located in protected areas of the Yucatan Peninsula have learned the identity and habitat of their local birds and flora.

"These professional fishermen were given basic training workshops in natural history, so they can use fishing vessels during off seasons for tourism," explains Riley. They also serve as natural resource and conservation educators in each of their villages.

In addition to seeking additional support for the training program for local naturalists on the Yucatan Peninsula, Gulf Crossings plans to work all along the Gulf Coast to obtain conservation easements, negotiate land swaps, and conduct bird inventories. The project is scheduled to run through 2004.

But that won't be nearly enough time, according to Nancy Jo Craig. "This is a huge undertaking," she says. "To identify all of the stopover sites and then think about what has to happen at those sites—this is a decades-long project."

Fortunately, Gulf Crossings is just one strand in an extensive web of cooperative international research and conservation initiatives across Mexico, Canada, and the United States. In addition to the previously mentioned Smithsonian Migratory Bird Center, the Important Bird Areas program (or AICA, as the program is known in Mexico) is working to create a network of sites vital to the conservation of birds. Another program that leaders describe as "catalytic" resulted from NAFTA's "Commission for Environmental Cooperation." The North American Bird Conservation Initiative (NABCI) is a partnership of governments, nongovernmental organizations, academics, and the private sector. NABCI is facilitating a process by which the three governments will select a small group of migratory and trans-boundary species (both mammals and birds) of continental concern, in order to define a cooperative framework for their conservation.

This grid of programs has agendas, initiatives, funding, and timetables that overlap, collaborate, augment, and probably even cannibalize one another. But like a good wind from the south, the final outcome will be birds flying safely across the Gulf once more. ■

Kristi G. Streiffert is a freelance writer based in Sante Fe, New Mexico, and a frequent contributor to this magazine.

For more information, contact Gulf Coast Bird Observatory, 103 West Highway 332, Lake Jackson, Texas 77566. Phone: (409) 480–0999

To visit Celestún: David Bacab leads cultural, birding, and natural history tours of Celestún through his business, Celestún Expeditions. Contact him at Calle 10 #97 entre 9 y 11, Celestún, Yucatan, Mexico, 97376. Telephone: 01–991–6–049. E-mail: celexp@sureste.com.

Special Offer!

The Birds of North America

A limited number of charter subscriptions to *The Birds of North America* are still available to members of the Cornell Lab of Ornithology (see *Living Bird*, Spring 1998). While the offer lasts, Lab members can purchase the entire 18-volume set (all 720 species accounts) for the remarkably low price of $1,875, a savings of $375 off the current individual charter price.

Don't miss this special opportunity. For more information, contact Pat Warner, The Birds of North America, 1900 Benjamin Franklin Parkway, Philadelphia, PA 19103; (215) 567-1170; e-mail: warner@birdsofna.org; web site: http://www.birdsofna.org.

The Birds of North America, No. 10, 1992

DAVID F. PARMELEE

Nyctea scandiaca

Snowy Owl

The Birds of North America

Life Histories for the 21st Century

Figure 1.

Order STRIGIFORMES Family STRIGIDAE

Going Birding?

Be sure you have the books, optics, and birding gear that will make your trip a success. ***The Birder's Catalog*** is a goldmine of birding products and resources.

Call for a free Birder's Catalog today!

ABA Sales

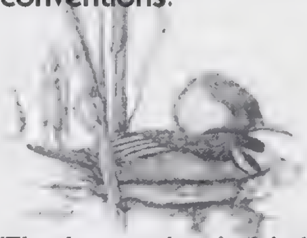
Specializing in books, optics, and accessories for birders.

PO Box 6599, Colorado Springs, CO 80934
Phone: 800/533-2473
Website: www.americanbirding.org/adcornell.htm

THE AMERICAN BIRDING ASSOCIATION
PO Box 6599
Colorado Springs, CO 80934
phone: 800/850-2473 or fax: 719/578-1480
E-mail: member@aba.org
Web Site: www.americanbirding.org

Join the American Birding Association — the only North American association for field birders. Get involved with bird education, conservation projects and

- Stay in touch with the latest issues in birding through **Birding** magazine and **Winging It** newsletter.
- Find all of the books, optics, and accessories you need in **The Birder's Catalog**.
- Make contact with local birders as you travel using our **Birder's Resource Guide**.
- Join us at birding **conferences** and **conventions**.



"The best value in birding today!"

Birding Optics
•
Field Apparel
•
Essentials

www.upstart-crow.com

Looking for a great bird slide?

SHORT-BILLED DOWITCHER BY TIM GALLAGHER

The Cornell Lab of Ornithology has a vast collection of excellent bird slides, available individually or in specially priced sets. Use our slides to fill gaps in your own slide shows or purchase complete sets, some of which include written scripts or taped narrations and bird sounds. Photographs are also available for commercial use. Write today for our free catalog or visit our web site at <http://birds.cornell.edu>.

CORNELL LAB OF ORNITHOLOGY
159 Sapsucker Woods Road, Ithaca, New York 14850
Phone: (607) 254–BIRD e-mail: <djw16@cornell.edu>

Before the next flight, upgrade to first class.

If birding has become a lifetime pursuit, consider binoculars worthy of your commitment. LEICA's unmatched combination of legendary optics, ergonomics, and field reliability elevate you to the pinnacle of performance. With light gathering abilities that extend your birding day. LEICA, field mark of the serious birder. Call toll-free for the dealer nearest you.

LEICA
The Optical Advantage
1-800-222-0118
Leica Camera Inc., 156 Ludlow Avenue, Northvale, NJ 07647 © 1999 Leica Camera Inc

Critics' Corner

FLIGHT MAPS

by Jennifer Price

New York: Basic Books; 1999

In *Flight Maps*, author Jennifer Price offers five fascinating essays grappling with the changing meaning of Nature (with a capital N) in America. Beginning with the Passenger Pigeon's quick road to extinction, she takes us on an enlightening journey through the century, and we become privy to the world of women's hats decorated with stuffed birds, suburbia's love affair with pink plastic flamingos, malls that feature stores devoted to Nature, and see how Nature is currently portrayed on television shows.

In her introduction Price writes, "I embraced Nature as the Last Best Places. I defined my experiences in Nature as more Real and Essential. I set Nature in stark contrast to everything modern and urban, and used Nature to articulate the social confusions and ecological destructions of modern urban American life." Price, a birder, looks to the historical relationship of Americans with birds for her answers about how, as a society, we got to where we are now.

The lengthy first essay, "Missed Connections: the Passenger Pigeon Extinction," begins with Alexander Wilson's description of a pigeon flock he encountered along the Ohio River in the early 1800s: "I took it for a tornado, about to overwhelm the house and everything around in destruction." After watching the birds pass over for five hours, Wilson estimated the flock's size at more than two billion birds. A mere century later, the Passenger Pigeon would be extinct. Price goes beyond attributing mere greed to the pigeon's demise, instead she makes a case for our disconnection from Nature. The transition to a more urban, economically expanding world meant that pigeons could be shot in the Midwest in the morning, then put on a train and served in New York City the next day.

In "When Women were Women, Men were Men, and Birds were Hats," Price describes the roles of late-Victorian women and men, the rise of bird hats, the development of an American conservation movement, the emergence of a modern market economy, and, finally, our disconnection from Nature, which leads us to guilt-free misuse of natural resources.

If you are interested in the history of ideas, you'll find Price's essays full of information and thought-provoking. And for birders, the first two essays provide a nice overview of two pivotal late 19th-century events—the loss of the Passenger Pigeon and the rise of Audubon societies in response to the devastation to bird populations caused by the trade in plumes and stuffed birds for women's hats.

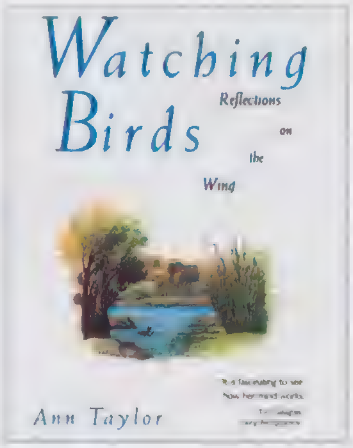
— *Rachel J. Dickinson*

WATCHING BIRDS

by Ann Taylor

New York: Ragged Mountain Press; 2000

Ann Taylor's new book, *Watching Birds*, is a wonderful collection of 19 personal essays. Although most of them have appeared previously in bird magazines or other publications, it's a pleasure to have them in one volume. They are beautifully written and paint a vivid picture of the development of a bird watcher.



Taylor takes us along with her on her journeys to discover birds. Whether she's in England, India, Italy, Mexico, Kenya, or in her own backyard, she is always a keen observer of her surroundings. A professor of English, Taylor comes to bird watching sideways through literature. She writes, "At Mount Auburn Cemetery, a bird landing spot in Cambridge, Massachusetts, I listen carefully to the fading melody of an Ovenbird and finally come up with its name. Almost immediately, Robert Frost's lines about that bird's song come to mind: *The question that he frames in all but words Is what to make of a diminished thing*. The bird's song is just a song to me, a pretty, drifting melody, an identifying field mark; Frost's words translate that song into metaphor and draw me into thoughts about loneliness and loss—sort of an *explication de chant*."

I love the self-deprecating way Taylor describes her encounters with birds. "I identified my first black-capped chickadee and heard clearly its famous *chick-a-dee-dee-dee* song at an Audubon sanctuary, where I stalked it as if it were on the endangered species list. This bird no doubt had fluttered around my head during all my years in Massachusetts, but I had never really noticed it." Or the time Taylor brought 15 of her college students to the window of the classroom to point out a Great Horned Owl on a neighboring roof only to be told later that it was not real and had been there for seven years.

In this passage, in which Taylor writes about bird song, she illustrates the breadth of her cultural experience with numerous wonderful references. "My own ear guides me to the company of less scientific listeners who, like Emerson, discover artistic sentiments expressed in birds' songs. My ear may not be good enough to hear the avian subtleties of patience, faith, generosity, or love in the chirps and trills and *quank-chunk-a-lunk-chunks*, but I think I can hear springtime in the cuckoo's song, as Beethoven did in his Pastoral Symphony, and I can certainly enjoy the lovely mockingbird on my neighbor's roof or in a good fiddle rendition of 'Listen to the Mockingbird.' And in poets, I hear even better the meanings of birds' songs."

— *Rachel J. Dickinson*

TO VEE OR NOT TO VEE

by Jack Connor

Pondering the advantages of formation flying

Is there a lovelier, more satisfying sight in the world of birds than a long V of geese flying north in spring? Few animal behaviors in all of nature seem so wonderfully precise and so carefully organized. How do they do it? And why?

I remember thinking, as a boy, that each goose in the flock took the same assigned position each time the group formed a V. The honking and circling that began each flight was, I imagined, an organized effort by the leaders of the flock to rouse the troops and order the lower-ranked birds into their proper places. Having watched too many war movies, I assumed that the goose who eventually placed himself at the point was the captain, the birds to his left and right his most trusted and loyal lieutenants, and the birds at the far end were the privates, who probably had to peel potatoes and wash out the latrine when the flock made camp at the end of the day. Wasn't it obvious that the farther back in line the bird flew the lower its rank? What self-respecting Marine—I mean, goose—would want to be way back at the end, when all of the action and decision making happened up front?

Obviously, my ornithological knowledge had some room to grow. Thinking back on those days, I wonder also about my visual alertness. Did I ever watch a single one of those flocks actually cross the sky? As any birder knows who has ever kept an eye on a V or two passing overhead, the point position in any goose formation shifts regularly: the V becomes a W or a chevron or even sometimes (as the original leaders fall way back) an M. Watch long enough and you will soon wonder whether any leader really wants to stay in first place. Could it be that somehow 2nd place, 3rd place, or even 20th, beats 1st?

Something else lost on me as a boy was how very few species fly in Vs. I assumed—as many nonbirders, including cartoonists, illustrators, and other graphic artists apparently still do—that the V formation was the ideal shape that all flocks aspire to. (One witty demonstration of this misconception was the bombardier pigeon flock in the Superbowl car ad a couple of years ago.)

Actually, of course, most flocking birds fly in groups too shapeless to be called formations. A globular cluster of grackles and blackbirds crossing the sky becomes a loose string, or several strings; two clusters of finches come together in a blob for a few hundred yards, then divide again into three or four clusters as they drop into the trees; 50 swallows seem to assemble for a few moments in a swirling circle, but soon peel away one by one, pursuing prey, until they have dispersed in 50 directions.

Most birds form tight flocks only when danger approaches: a Peregrine Falcon swoops over a mudflat and the sandpipers below flush into the sky in a flock so close each bird seems to have barely enough space to flap its wings. Like fish in a school, each individual in one of these flocks finds protection by staying as close to the center as it is able, and none is the leader. High-speed photographs indicate that each bird zigs and zags in quick response to the birds on each side, so any turn, left or right, up or down, flows through the flock in a wave, although the movements look instantaneous to the human eye.

One other misconception about bird flocks is the idea that the individuals in a flock are a cooperative family group—something like a human clan or tribe. In truth, most bird families break up a few weeks after the young leave the nest, and parents in most species make no attempt to stay with their young. The majority of bird flocks are random assemblies of unrelated individuals, and the composition of members often changes from day to day or even from minute to minute. What seems like cooperation is actually a begrudging acceptance of strangers, made necessary by the dangers of predators and the endless search for food. Every bird joins the flock only to take advantage of the others for its own good.

But still we have those Vs, at least among certain groups: geese, swans, ducks, cormorants, cranes, pelicans, ibises, and a few other large birds. Why do they do it? And why not smaller birds? Why don't grackles, blackbirds, finches, swallows, sandpipers, and other flockers ever V?

"Geese in a V are like bicycle racers in a pack," I've heard people say. "They are breaking the wind for each other." Smaller birds can't do it, a veteran birder once told me, "because they don't cut a big enough hole through the air."

Bicyclists do cut holes through the air for the riders behind them, and so racers draft off each another, reducing wind resistance and thus gaining efficiency. But bicycle formations are generally long strings, each rider hunched over, hiding from the wind, and lined up directly behind the rider ahead, the front wheel of each as close as possible to the rear wheel of the bike ahead. Birds rarely, if ever, fly in such straight, tight lines. The geometric shapes we see—Vs, Ws, Ms, and so on—are created because geese, swans, and the others line up off-center, each bird slightly outside (and often slightly above) the bird ahead.

An afternoon in the library reading about the aerodynamics of Vs convinced me that I have no future as a physicist, but I can report a couple of the simpler points. One crucial difference between bikers and birds is that birds *need* the wind; wind gives them their lift. A biker would ride fastest in a vacuum, with no wind resistance at all to fight; a bird in a vacuum would be left flat on the ground, flapping its wings to no effect. As I understand it, V-flying birds gain efficiency not by avoiding the wind but by riding into the turbulence stirred by the wingtips of the bird in front. These vortices of air swirl off the wingtip and somehow—please refer to your neighborhood aeronautical engineer for further information—provide extra lift.

Apparently, the gain is minimal; some researchers have even suggested it is nonexistent and that birds fly in Vs only for orientation purposes: the formations allow birds to face ahead while keeping a corner of an eye on the bird to the side. The article I found most convincing, however, "An Analysis of Function in Flight Formation of Canada Geese" by John P. Badgerow in *The Auk*, October 1988, argued that V-flyers gain both aerodynamic advantage and improved orientation. Badgerow analyzed 50 formations flying over Montezuma National Wildlife Refuge, measuring the distances between birds, and concluded that lift was optimized when the birds' wings overlapped by precisely 16 centimeters. When the inner wing of the trailing bird flapped inside the outer wing of the leading bird by precisely that much, the bird gained maximum efficiency. Flying so closely together takes attention, however, and the efficiency drops quickly for spacing that is even slightly wider or narrower. Badgerow speculates that such a small advantage can only be worth the effort among large, heavy birds. Geese, swans, and other V-flyers have high wing-loading, pay a higher price in general muscular effort than smaller birds, and so gain more from tiny improvements than smaller birds would. Apparently, smaller birds don't V, despite the orientation advantage they might get, because the increase in aerodynamic efficiency would be less than the cost of keeping themselves so close together.

One puzzle I did not find addressed in my browse through the literature: Why would any bird ever take the lead? If all flocks are composed of selfish strangers, why should any one help any other? Why do more work than the birds behind you? Bike racers take the lead reluctantly and drop back at the first opportunity, except when they are working with teammates, when each member of the team takes a turn battling the wind. Can we imagine teammates in a bird flock? Not in most flocks, but I find it interesting that many V-flying birds share something else in common other than the geometric shape of their flocks. Geese, swans, and cranes are among the very few V-flyers in the world, and they are also among the very few groups of birds in which families stick together on migration and through the winter. Do Vs get started because parents in these groups are willing to ride the point for their offspring?

I'd be interested to hear from anyone watching Vs at migration points this spring and fall. Immatures can be distinguished from adults (at least in fall) in both the blue and white phases of Snow Goose, Ross's Goose, White-fronted Goose, Tundra and Whistling swans, White Ibis, and both Sandhill and Whooping cranes. How often is an adult in the lead position in these flocks? How often is the leader an immature bird? When a new leader pulls ahead—when a V becomes a W, for instance—how often is the new leader an adult with immature birds right behind? Could that be a parent moving ahead to help its young following on its tail?

And now you'll have to excuse me. I think I hear some geese honking overhead. ■

TOM VEZO

Few sights in all of nature seem so wonderfully precise and organized as a flight of geese.

The Catbird Seat

A CHAT ABOUT THE RULES

by Pete Dunne

I halved the distance and stopped. The Yellow-breasted Chat didn't fly. I cut the distance to ten feet . . . five. The bird wouldn't budge.

This is incredible, I thought. All my life, birds have fled as I approached. This one was breaking the bird vs. birder rules. This one was letting me get so close I couldn't even focus on it.

"Close enough?" the bird asked.

"You can talk?" I said.

"I'm a chat. And you're the guy who writes that bird-watching column, right?"

I nodded.

"Excellent," said the bird. "I've got a message for your readers. A sort of warning peck across the bow. Tell your confederates to stop changing the rules, or we're going to stop playing fair."

"Excuse me?" I said.

"Look. We worked the rules of engagement out long ago," the bird explained. "We hide; you find us. We offer brief or distant looks; you try and note field marks. We fly away; you guess our names. Get it right, you win."

"So?" I said.

"So stop with all this digital recording equipment and video stuff. That's not field birding. That's collecting, then making identifications after the fact. And that's not fair," the bird said, mildly. "Real birding in real time. That's what we agreed to."

The bird had a point. Field identification is a real-time deductive process that brings knowledge and experience to bear *in the field.* The art has taken a century to develop, and it is the very essence of birding.

Hooking a camcorder up to a spotting scope for later review is the very antitheses of field birding. It doesn't require skill. It doesn't constitute a challenge. All it requires is a good library or a skilled second party to identify the bird for you.

Still, I couldn't see where it made that much difference, and I couldn't see what the birds were going to do about advances in technology anyway—a point that I pointed out.

The chat smiled. "Watch," it said, and I did. Watched as the bird pulled out a stretchy red cap. Dabbed a little makeup over his lores. Garnished the tip of his tail with a strategic squirt of guano . . . and suddenly I was looking at a newly minted Fan-tailed Warbler.

"You can't do that," I whispered.

"Au contraire," he said, removing the cap, reaching for a comb, parting his crown. Then, fluffing his back feathers, he reached for a mascara kit, etched a big black V on his chest, then started on his face.

"You want Eastern or Western meadowlark," he asked.

"It's not fair!" I croaked.

"Exactly right," the bird said.

"It's going to make every identification questionable!" I gasped.

"Worse than that," said the bird. "It's going to make life birds cheap. As we speak fifty million American Robins are learning to spin like tops, just waiting for the signal to bob their tails and drop into the nearest birdbath. How much do you think your life Red Phalarope is going to be worth when that happens?

"It gets worse," he continued cheerfully. "All across North America, squadrons of House Sparrows are hoarding yellow Easter egg dye, bleaching their undertail coverts and training for life in the canopy. It won't be long before a birder won't cross the street to see a Bachman's Warbler.

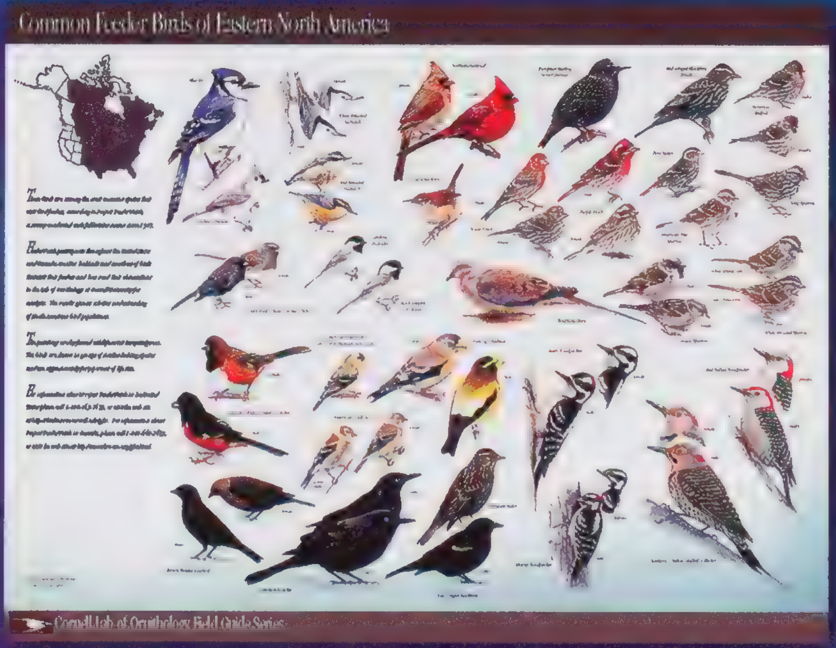
"It doesn't have to be this way," the bird promised. "Just stick to the status quo, leave the tech-weenie stuff home, and we'll forget about the charades. Deal?"

I started to leave, but then it occurred to me that bird photography broke the real-time rule, too. Birds had let us get away with that. I turned to ask for a rule interpretation only to find a Labrador Duck perched where the chat had been. As I watched, the bird threw back its head, sang *witchity, witchity, witchity,* then *Oh, sweet Canada, Canada, Canada,* and winked.

I turned and ran. ■

ILLUSTRATION BY JEFF SIPPLE

A PANORAMA OF BIRDS


Common Feeder Birds of Eastern North America
Cornell Lab of Ornithology Field Guide Series

Common Feeder Birds of Western North America
Cornell Lab of Ornithology Field Guide Series

The birds that brighten your winter mornings can now grace the walls of your den, family room or office. And they're all here -- the "top 25" species that are most frequently reported by participants in Project FeederWatch. ■ Measuring 17" x 22", the poster is printed on two sides. One side features Feeder Birds of Eastern North America, with reverse side showing Feeder Birds of Western North America. Shown in relative size, the birds are painted by famed artist Larry McQueen. ■ When you purchase through this ad, Lab members receive a 20% discount off the regular retail price of $10.00. A portion of all proceeds goes directly to the Cornell Lab of Ornithology, so please order today. ■ Poster, Each $ 8.00 / Shipping & Handling $ 3.50 / Total $11.50 / Quantity Discount: 4 or more, posters are $6.00 each, with a single $ 3.50 S & H charge. ■ All posters are rolled and shipped in sturdy tube for safe delivery. ■ Order today by calling Toll-Free 1-888-547-1144. Or remit check payable to: The HB Group, LLC / P.O. Box 31 / Cooperstown, NY 13326

A lot of great birders have raised glasses in this event

Roger Tory Peterson
Kenn Kaufman
Ted Parker
Will Russell
David Sibley
Jon Dunn
Pete Dunne
Paul Lehman
Shawneen Finnegan
Michael O'Brien...

17th Annual
WSB
WORLD SERIES OF BIRDING
NEW JERSEY AUDUBON SOCIETY

MAY 13, 2000

To learn how to participate or
become a team sponsor, call or write:
World Series of Birding
CAPE MAY BIRD OBSERVATORY
P.O. Box 3
Cape May Point, NJ 08212
Ph: 609.884.2736 • Fx: 609.884.6052
E-mail: sheilalego@njaudubon.org
www.worldseriesofbirding.org

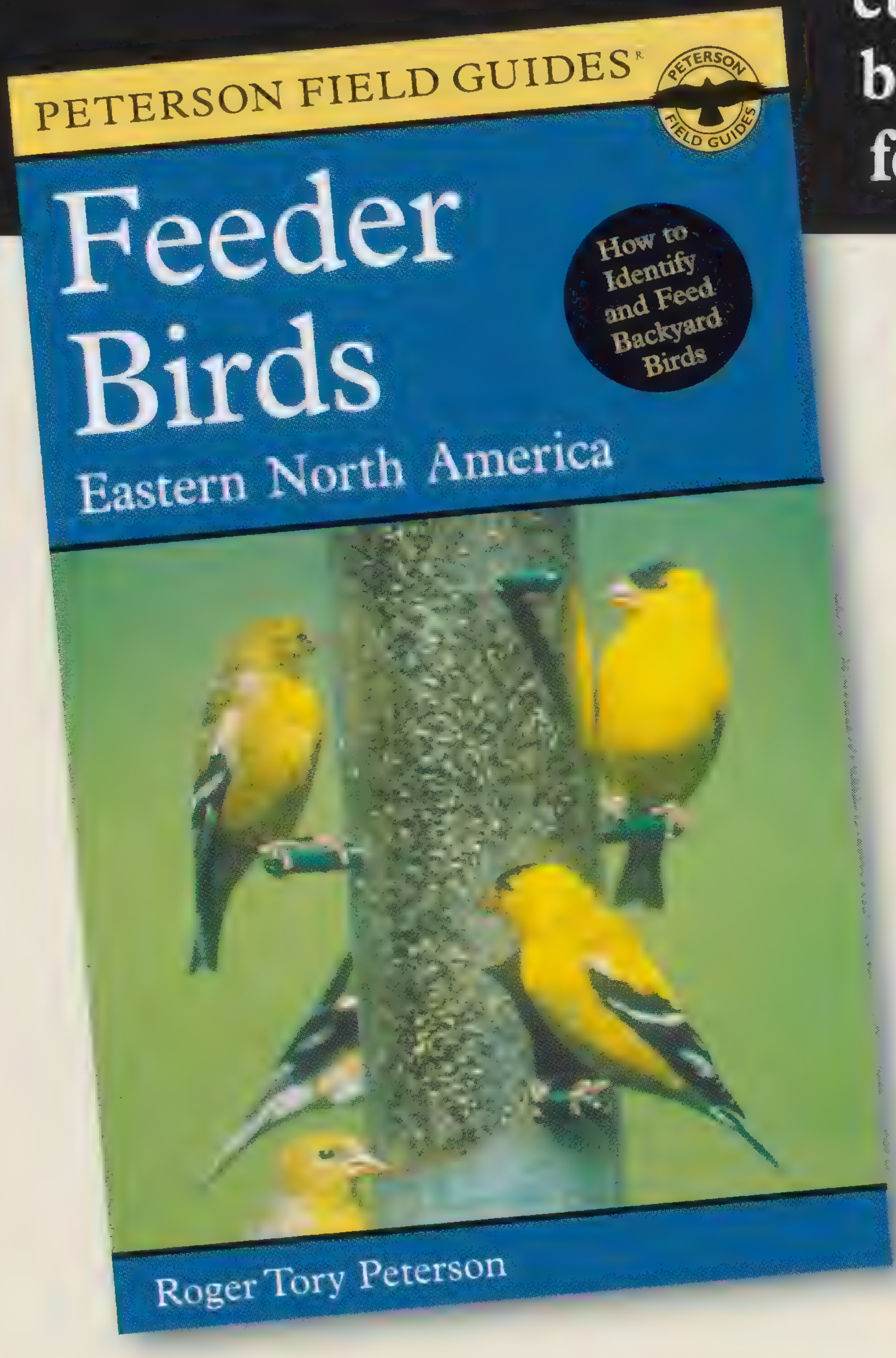
RAISE $$$ FOR THE CONSERVATION CAUSE OF YOUR CHOICE

LIVING BIRD

For the Study and Conservation of Birds

SPRING 2000

Announcing the *Peterson Field Guide to Feeder Birds,* based on the classic *Field Guide to Eastern Birds* and customized especially for backyard birders and feeder-bird enthusiasts.



Featuring Roger Tory Peterson's classic art in a larger format, the *Peterson Field Guide to Feeder Birds* is designed for the more than 60 million North Americans who enjoy feeding and watching birds.

Backyard birding has become a popular hot topic. Add the *Peterson Field Guide to Feeder Birds* to your collection of field guides and enjoy a world of birds right in your own backyard!

- The *Peterson Field Guide to Feeder Birds* includes only birds that frequent feeders.
- The most commonly seen birds are placed first, followed by the harder-to-identify birds that rarely visit feeders.
- The brand-new introduction by Noble Proctor is a comprehensive manual of bird-feeding topics.
- A handy quick-reference list tells the kinds of food that attract each species, and a feeder checklist allows you to check off birds as they are seen.

At bookstores everywhere

http://www.hmco.com/trade

HOUGHTON MIFFLIN COMPANY

A Publication of the
Cornell Laboratory of Ornithology

LIVING BIRD

SPRING 2000 VOLUME 19 NUMBER 2

GREETINGS FROM SAPSUCKER WOODS

One of the great things about working at the Lab of Ornithology is meeting the interesting people who come here. The Lab is increasingly becoming an international crossroads for researchers, artists, and other people with a deep interest in birds. The constant stream of visitors also provides a rich source of material (and authors) for *Living Bird* articles. One such visitor is Mark Watson, a former British paratrooper who left that life of danger and adventure to become a field ornithologist—which, as it turns out, also has plenty of danger and adventure.

I first met Mark a couple of years ago when he came to the Lab's Library of Natural Sounds (LNS) to listen to tapes of the New Guinea Eagle (one of the least-known birds in the world), which he was on his way to study in the field. He had just returned from Kazakhstan, where he'd been studying Saker falcons. He showed me pictures of the falcons on the screen of his laptop computer and talked enthusiastically about his adventures in this far-flung outpost of the former Soviet Union.

Many months later, after his field work in New Guinea, Mark stopped at the Lab again, to compare the eagle recordings he'd made with existing recordings in LNS. He found he had one type of vocalization that had never previously been described. He also had some fascinating tales to tell about the long months he'd spent in the wilds of New Guinea. His stories were so interesting, we talked him into sitting still long enough to write a feature about his remarkable experiences, which we're pleased to present on page 8 of this issue.

Tim Gallagher
Editor-in-Chief

Cover: During some years, hummingbirds—such as this stunning adult male Rufous Hummingbird—visit feeders far less frequently than usual. Are their numbers fluctuating, or are other factors at work? Photograph by Jim Roetzel.

Right: Researcher Mark Watson (with beard) spent months in the mountains of New Guinea, living and working side by side with the indigenous people of the area on an eagle study. See page 8. Photograph by Mark Watson.

Back Cover: One of springtime's most beautiful wood warblers: an adult male Northern Parula. Photograph by Tom Vezo.

8 EAGLES OF THE CLOUD FOREST *by Mark Watson*
Searching for rare eagles in the remote mountains of New Guinea.

14 WHERE HAVE ALL THE HUMMINGBIRDS GONE? *by Rachel Clark*
Just because fewer hummingbirds are visiting your feeders, it doesn't necessarily mean that these colorful birds are vanishing.

20 HIGH PLAINS DRIFTERS *by Marcia Clouser*
Skylarking in the arid grasslands of Wyoming.

28 BIRDING AT THE ROCK *by Terra Hangen*
Once an infamous penitentiary housing the likes of mobsters Al Capone and Machinegun Kelly, Alcatraz Island now hosts scores of nesting seabirds.

Departments

4 LETTERS
5 BIRDNEWS
37 CRITICS' CORNER

Columns

6 SPOTLIGHT *by David S. Wilcove*
Restoring rails.

33 PICTURE PERFECT *by Tim Gallagher*
Beach birds.

38 THE CATBIRD SEAT *by Pete Dunne*
Truth and consequences.

LIVING BIRD
SPRING 2000 VOLUME 19 NUMBER 2

Editorial Staff

Editor-in-Chief: Tim Gallagher
Design Director: Kat Dalton
Associate Editor: Leslie Intemann
Technical Editors: Kevin J. McGowan
Kenneth V. Rosenberg
Publications Assistant: Patty Porupski
Contributing Editors: Jack Connor
Pete Dunne
Mel White
David S. Wilcove
Advertising Manager: Barbara Guttridge

Administrative Staff

Louis Agassiz Fuertes Director
John W. Fitzpatrick

Associate Director
Scott Sutcliffe

Director, Education/Citizen Science
Richard E. Bonney, Jr.

Director, Library of Natural Sounds
Jack W. Bradbury

Director, Bioacoustics Research Program
Christopher W. Clark

Director, Bird Population Studies
André A. Dhondt

Director, Conservation Science
John W. Fitzpatrick

Director, Publications
Tim Gallagher

Director, BirdSource
Steve Kelling

Curator, Systematics & Collections
Kevin J. McGowan

Director, Operations
Carol Pyhtila

Director, Communications & Marketing
Allison Childs Wells

Administrative Board

Edwin H. Morgens, Chair
Ellen G. Adelson
E. Edward Bruce
Peter J. Bruns
Thomas E. Donnelley II
Jean W. Douglas
Theodore L. Eliot, Jr.
Jane C. Engel
Cutberto Garza (ex-officio)
Mary P. Hines
Bruce S. Howard
Ronald R. Hoy
Imogene P. Johnson
Mary Johnston
Austin H. Kiplinger
Randolph S. Little
Linda R. Macaulay
Francis P. Pandolfi
Wendy J. Paulson
Olin Sewall Pettingill, Jr.
Elizabeth T. Rawlings
Frank H. T. Rhodes
Carol U. Sisler
Stanley A. Temple
Charles E. Treman, Jr.
Joseph H. Williams
David W. Winkler

Living Bird, ISSN 1059-521-X, is published in January, April, July, and October by the Cornell Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Telephone: (607) 254-BIRD. *Living Bird* is free to members of the Laboratory, a nonprofit, membership organization. Our mission: "To interpret and conserve the earth's biological diversity through research, education, and citizen science focused on birds." For more information please write to our Membership Department. Membership is $35 a year. The Laboratory assumes no responsibility for unsolicited photographs or manuscripts. Copyright 2000 Cornell Laboratory of Ornithology.

Visit our web site at <http://birds.cornell.edu>.
Printing by Brodock Press, Utica, New York.
Printed on recycled paper.

Letters

DANCING OR FIGHTING?

I am writing in response to Dinah Foglia's letter that invited taking a second look at a photograph of a Great Blue Heron "dancing" along the beach (Winter 2000). The photograph actually tells only half the story. The "snooty" behavior is a good tip-off that there's an argument going on. Just outside the frame (and to the left) is another Great Blue Heron, in opposing posture. The two birds are contesting the right to forage along that portion of beach. The interaction will end when one of the birds withdraws, allowing both to resume foraging, or with an aerial chase that may extend up to a quarter-mile before the victor returns. It's apparently a widespread misconception that such herons are dancing, but they are not. The "stretch" display is the most attractive of many courtship behaviors performed by Great Blue Herons, but these are seen at the nest, not in foraging areas.

Richard T. Paul, Manager
Florida Coastal Islands Sanctuaries
Audubon in Florida
Tampa, Florida

FLYING MAGAZINES?

Thank you for the extraordinary issue of *Living Bird* that "flew" out of my mailbox this morning. When I opened it and found the article on Lars Jonsson (Winter 2000), I knew that I was in for a morning of wonderful distraction. I hardly know where to begin to compliment you—mostly, I suppose, for giving so many pages to the beautiful work of this fine artist, but also for reproducing the color and light of his work with such sensitivity and breath.

My husband's family is Swedish, and our son has lived in Stockholm for two years. I love Sweden and especially appreciate the Swedes' love of their natural surroundings. I often return to the Thiel Gallery in Stockholm just to stand on the stairway under the large paintings by Liljefors.

Martha Hill is absolutely right in stating that like Liljefors, Jonsson "feels the same humbling wonder that there is so much we still don't understand about creatures and what they think and feel." This is so beautifully conveyed in Jonsson's paintings that you have given us, that I treasure this issue of *Living Bird.* Many many thanks.

Faith Ford Sandstrom
Coconut Grove, Florida

BINOCULAR VISION

Thank you for the great optical reviews you do in *Living Bird.* The most recent binocular review (Spring 1999) was superb. I like that these reviews don't get bogged down in nitty-gritty details but instead provide practical, useful information for the reader. It's very helpful for me to see how a group of birders rates the optics versus seeing the manufacturers' technical specifications. And I like the rating system too—especially for things like eyeglass use, handling, and your handy field of view from 15 feet. I place a lot of emphasis on Ken Rosenberg's personal comments because we seem to have the same tastes in binoculars. I too wear eyeglasses and have struggled with tunnel vision in binoculars for years. Thanks again for your great reviews. They are a wonderful complement to—in my mind—the most well-done general publication on birding.

Kort Utley
Denver, Colorado

We welcome letters from readers. Write to The Editors, *Living Bird,* 159 Sapsucker Woods Road, Ithaca, New York 14850, or send e-mail to <livingbird@cornell.edu>.

In Memoriam

The Lab of Ornithology lost a dear friend this past December when Dorothy McIlroy passed away at the age of 91. Dorothy had played a prominent role in the Ithaca, New York, birding community since before many of us were born, and she knew personally all of the major figures in the early days of the Lab of Ornithology. In fact, she was a high school classmate of Lab cofounder Peter Paul Kellogg. It was he who encouraged her to take Arthur "Doc" Allen's summer-school course in ornithology during the 1920s. She ended up coming back summer after summer and helping Allen lead his biweekly bird walks to Stewart Park and Sapsucker Woods—long before it became home to the Lab of Ornithology.

Dorothy also met famed bird artist Louis Agassiz Fuertes and attended one of his talks at Cornell, shortly before his death in 1927. I particularly remember talking with her about Fuertes. She was amazed what an entertaining speaker he was, always keeping his audience interested and amused. At one point in his talk, she said he put his hand inside a monkey skin and used it as a ventriloquist's dummy, having it speak directly to the audience.

Born Dorothy Wellington in Rochester, New York, she earned a master's degree in math and physics from the University of Rochester. Her life nearly spanned the entire 20th century. She first began watching birds as a fifth grader, using her mother's fancy mother-of-pearl and gold-trimmed opera glasses to get close-up views of her neighborhood birds. Though she'd been involved in the Ithaca birding community much earlier, through her summer-school days with Doc Allen, it wasn't until 1952 when her husband Malcolm McIlroy became a professor at Cornell that she moved here for good.

Dorothy was an enthusiastic birder almost to the very end of her life—even after she'd lost much of her hearing and her eyesight was failing. She was an important fixture in the local as well as the state birding community for decades. She twice edited a local guidebook, *Birding in the Cayuga Lake Basin*—a valuable reference for visitors and residents alike, describing and providing directions to all the best birding locales in this bird-rich area. For several years, she was a regional editor for *The Kingbird*, the journal of the Federation of New York State Bird Clubs. And she coordinated the work of 100 field observers for *The Atlas of Breeding Birds in New York*, documenting the distribution of the state's nesting birds.

Dorothy McIlroy

Dorothy was always an exacting observer of bird life, who took copious notes on her sightings and always encouraged others to do the same. More than a few prominent birders are grateful to her for providing an early grounding in effective note taking and record keeping.

Three years ago, we published a profile of Dorothy McIlroy's life in *Living Bird* ("Ithaca's First Lady of Birding," by Allison Childs Wells, Winter 1997). I visited her several times as we were designing that article, hoping to find some great pictures of her watching birds many years ago. She pulled out a stack of old photo albums, as well as numerous packages of color slides, and graciously let me take them to my office to look through at my leisure. Going through page after page in the albums, I finally found exactly what I wanted in an album she'd probably put together in the 1920s or early 1930s. It was a picture of her as a young woman, standing in the woods with her cased binoculars slung around her neck. This picture tells so much about Dorothy McIlroy's life, we're printing it here again.

I think what is particularly sad about someone like Dorothy passing away is that you not only lose that person, you also lose a living connection with the fascinating times, places, and people that she knew throughout her life. I'm just grateful that I got to know her during the last decade of her life. She will be greatly missed.

Dorothy is survived by her son Douglas, of Etna, New Hampshire; her daughter Nancy Neupert, of Boulder, Colorado; four grandchildren; and one great-grandchild.

— *Tim Gallagher*

Spotlight

RESTORING RAILS

by David S. Wilcove

When it comes to helping threatened birds, it's always better to preserve their natural habitat than to try to restore what's already been lost

Conservationists striving to protect endangered species must grapple with the ugly consequences of two facts. The first is that the leading cause of species endangerment is habitat destruction. According to a recent study, 85 percent of the imperiled species in the United States are in trouble at least in part because of the destruction of their habitats. The second is that by the time most species are added to the federal endangered species list, their numbers have fallen so low that even their short-term survival is in doubt. A winter storm, a summer drought, or just the random fluctuations in their birth and death rates may be enough to drive them to extinction, even if the remaining habitat is protected.

The inescapable conclusion is that unless we can somehow create more habitat for our endangered species, thereby enabling them to increase in numbers, they are probably doomed to extinction. And that's no easy task, in large part because restoration ecology—the branch of ecology that deals with the repair of damaged ecosystems—is a very young science. Even the most carefully designed restoration projects are likely to hit a few unexpected snags, testing both the patience of the scientists involved in the projects as well as their ability to adjust and improvise. Such has been the case with a long-running effort to restore the saltmarsh habitat of the Light-footed Clapper Rail (*Rallus longirostris levipes*) near San Diego, California. Call it a case of learning by doing or, to pick a fancier term, adaptive management. What it amounts to, however, is a lesson in how complex any ecosystem—even a seemingly simple one—really is.

The Light-footed Clapper Rail occurs along a 400-mile stretch from Santa Barbara, California, to San Quintin, Baja California, where it inhabits saltmarshes containing tall, dense stands of Pacific cordgrass. The extraordinary growth of California's human population in recent decades has come at a great cost to the state's natural ecosystems, in particular its wetlands. By one estimate, more than 90 percent of California's wetland area has been destroyed, including many coastal saltmarshes. This ongoing habitat destruction, coupled with high rates of predation by dogs, cats, and other animals, caused the U.S. Fish and Wildlife Service (USFWS) to add the Light-footed Clapper Rail to the endangered species list in 1970.

When the California Department of Transportation (Caltrans) and the U.S. Army Corps of Engineers proposed disturbing some potential rail habitat in San Diego Bay as part of a plan to widen a freeway and construct a flood control channel, the USFWS insisted they restore two areas of saltmarsh nearby. The site chosen for restoration consisted of dredge spoils and landfills adjacent to the towns of Chula Vista and National City. The scientist chosen to monitor the restoration project was Joy Zedler, a wetland ecologist, then at San Diego State University and now a professor at the University of Wisconsin.

At first glance, a saltmarsh may seem like a fairly simple ecosystem to restore—it consists of just a few plant species arrayed along gently sloping terrain. In reality, however, a saltmarsh is anything but simple. The marshes inhabited by Light-footed Clapper Rails consist of three intergrading habitats—low, middle, and high marsh—that vary slightly in elevation and are therefore subjected to different degrees of flooding as the tides ebb and flow. Consequently, each habitat exhibits its own distinctive vegetation, with tall cordgrass dominating the low marsh near the channels, pickleweed in the middle marsh, and small shrubs and matted grass in the high marsh. The rails spend most of their time skulking in the tall cordgrass of the low marsh. But during floods and high tides, the birds must retreat to the high marshes and even the uplands, until subsiding water levels enable them to return to their beloved cordgrass. To restore a home for the rails, Caltrans had to ensure that all three types of marsh were accessible to the birds.

Caltrans began by planting cordgrass, but the young plants failed to grow tall enough to attract rails. Further investigation by Zedler and her colleagues revealed that the soils were too coarse, lacked organic matter, and were deficient in nitrogen. The scientists dutifully added nitrogen, and the cordgrass seemed to respond. But before the cordgrass could grow tall enough for the rails, it became infested with scale insects, which weakened and killed the plants. Nothing like this had ever been seen in a natural saltmarsh. The cause of the infestation was traced to a missing species—in this case, a predaceous beetle that, under normal circumstances, appears to keep populations of scale insects in check. The beetles had not been able to colonize the restoration site because the cordgrass was too short to provide a refuge for them during the high tides. The scientists had stumbled upon a remarkable story: the survival of the Light-footed Clap-

ILLUSTRATION BY JOHN SCHMITT

per Rail was indirectly tied to the survival of a small beetle that ate the bugs that ate the plants that sheltered the rails.

Moreover, cordgrass wasn't the only plant to benefit from the addition of nitrogen. So did an annual succulent. It has done so well, in fact, that it has begun outcompeting the cordgrass. Unfortunately, it does not provide suitable habitat for rails, thereby creating another setback for Caltrans.

With further trial and error, Caltrans eventually restored some of the vegetation needed by the rails. But the plants never grew tall enough to provide suitable nesting habitat. Furthermore, Caltrans could not change the fact that the restoration site itself abuts two cities, which means the high ground above the marsh is used by cats, dogs, and other predators of Clapper Rails. Most of the time, the birds can hide in the relative safety of the marsh, but during exceptionally high tides or floods, they have no choice but to head for the dangerous high ground. This problem, of course, is not limited to this site. With more than half of California's burgeoning human population crowded into a narrow strip along the southwestern coast, most of the remaining saltmarshes inhabited by Light-footed Clapper Rails are now surrounded by cities, posing a serious threat to the survival of the birds. (The identical problem bedevils the California Clapper Rail, another endangered race that inhabits saltmarshes around San Francisco Bay).

Despite the best efforts of Caltrans, the restored marsh is unlikely ever to be particularly good habitat for Light-footed Clapper Rails. Indeed, if all this work has taught the scientists anything, it is the importance of protecting what remains of our natural ecosystems. To quote Zedler, "Preventing the plague of excessive habitat loss is preferable to the lengthy, costly, and uncertain cure of restoration." ■

Further Reading:

Zedler, Joy. 1988. "Replacing endangered species habitat: The acid test of wetland ecology." Chapter 15 in Conservation Biology (2nd ed.) (P. Fiedler and P. Kareiva, Eds.). Chapman and Hall, 1998.

Zedler, Joy B., and Abby N. Powell. 1993. "Managing coastal wetlands: Complexities, compromises, and concerns." Oceanus, pps. 19–28 (Summer).

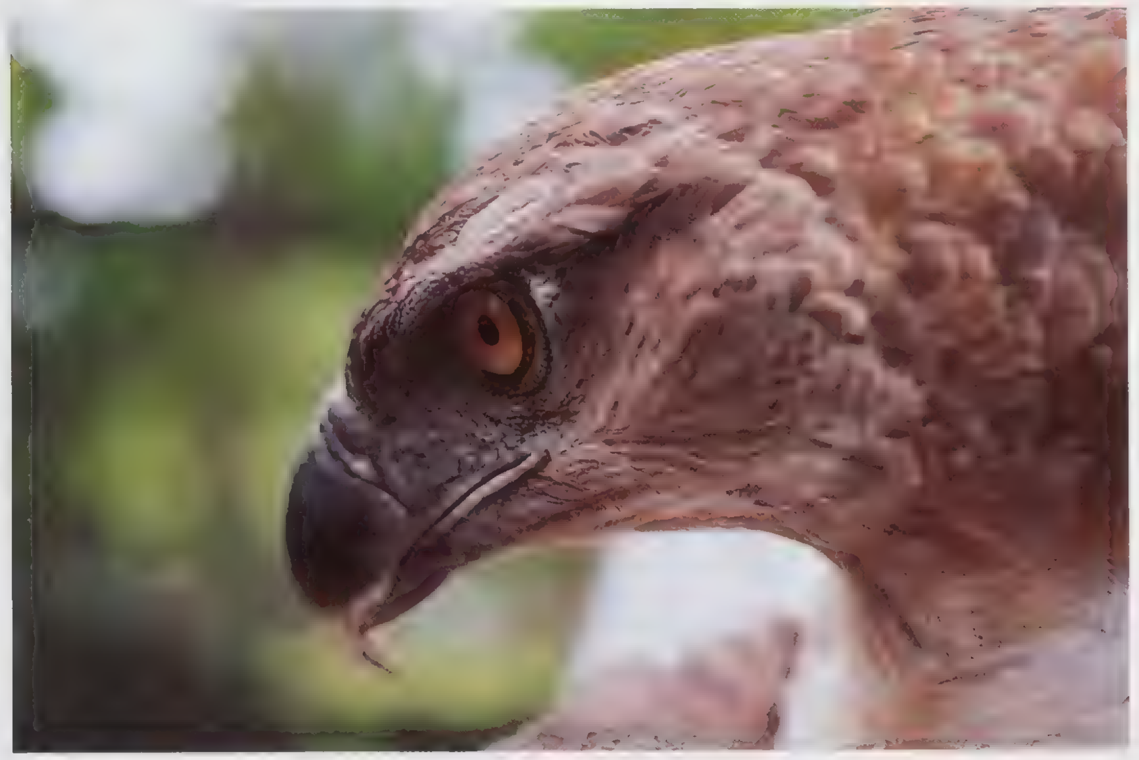
The view from the top of the forest canopy is stunning—a spectacular vista that is impossible to see from the forest floor, with its dense understory of vines and epiphytes. At right, the subject of the author's search: a New Guinea Eagle, one of the least-known birds of prey in the world.

Eagles of the Cloud Forest

TEXT AND PHOTOGRAPHS BY MARK WATSON

Searching for rare eagles in the remote mountains of New Guinea

Scrambling up the tree using climbing spikes, I heaved on the sling again and swung up onto the moss-covered limb, high above the floor of the cloud forest. For a few moments I lay there, catching my breath and for the first time taking in the spectacular view above the forest canopy. An entire mountainside stretched out before me, disappearing in the distance in wraiths of dense white cloud. After searching for three months, I had finally reached the nest platform of a New Guinea Eagle *(Harpyopsis novaeguineae)*, high in the canopy of the cloud forest. To gain this lofty branch, I had to climb through a dense foliage of vines and epiphytes, sometimes grabbing vines to haul myself up, not always know-



BHL

Blank Page Digitally Inserted

Mark Watson employed local villagers, like Sam of the Imbongu people (pictured above), to help him with his research. At right, the author works on his daily field notes in his jungle office.

ing for certain whether they would support my weight or come away in my hands, causing me to tumble back into the dank and gloomy understory of the forest.

The eagle nest was a flat and matted section of moss and debris on a horizontal limb of a hinomou tree, 36 meters above the forest floor. Although our three-man team had seen and heard eagles calling in the vicinity, my climb revealed that the nest was no longer being used by the birds. But the report I'd received that eagles had produced one fledgling here was probably correct; we had seen an eagle fly from here just three days earlier, most likely one of the adults.

Although I was disappointed, I took photographs and gingerly reached into the nest to collect the bones of prey that had been eaten there, which included two parts of the pelvis of a forest wallaby. This common animal of the forest floor can weigh up to three kilograms (6.6 pounds), which gives you some idea just how powerful this eagle must be to carry such heavy prey to its nest in the forest canopy.

While sifting through the debris in the nest, I heard a shout from Smith Asoyama, one of my field assistants, who was standing below the nest tree, almost out of view in the thick green foliage. Turning my head quickly, I saw an adult female eagle perched not 10 meters from me right on the nest branch. Judging

from the bird's proportions and build, I could see that she was a particularly huge individual, standing a full meter high, and she showed no signs of fear. I could see her long legs and powerful feet grasping the branch firmly as she raised her strikingly barred black-and-white wings and tail for balance. As she walked toward me along the branch, finally getting to within three meters, I thought she might attack. She was so close, I could see the amber iris of her eye as she bobbed her head from side to side in curiosity.

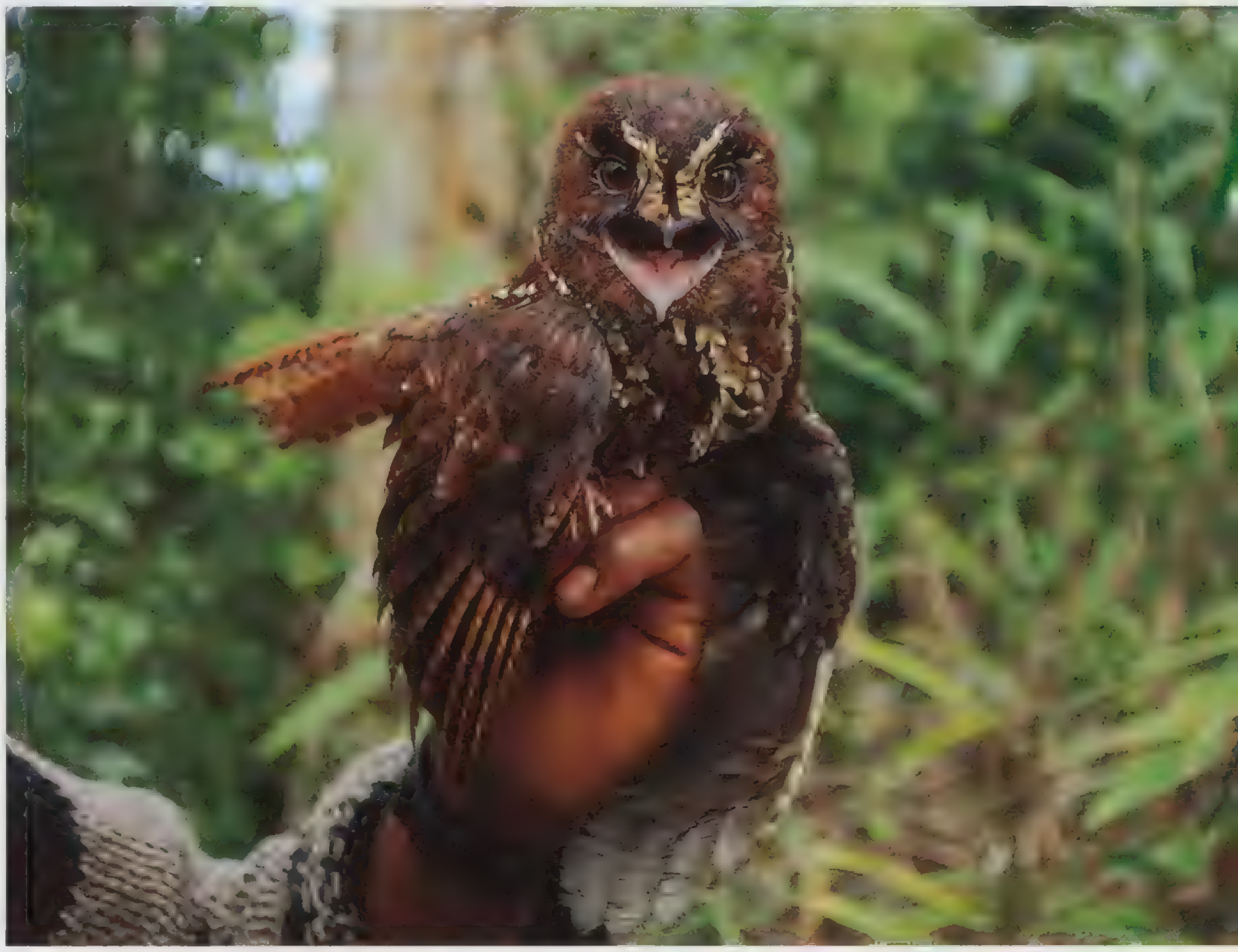
This was the closest I came to a wild New Guinea Eagle during my entire 10-month study—perhaps closer than I wanted to get. After facing off each other for a few seconds, the eagle turned and ran along the branch before launching into the blue haze of an afternoon sky and vanishing immediately behind the crowns of endless huge trees. I gathered up my gear and rappelled carefully back down into the perpetual darkness of the forest interior.

The Peregrine Fund had recruited me in September 1998 to conduct fieldwork on the New Guinea Eagle—sometimes called the New Guinea Harpy Eagle—one of the least known birds of prey in the world, found only in the remote forest interior of the island of New Guinea. The diversity of birdlife in New Guinea is one of the richest anywhere and, unlike many other tropical countries, most of the original forest is intact. This is mainly due to the extreme ruggedness of the terrain, which has fortunately made it difficult for logging and mining companies to exploit the area. All of these factors provided a unique opportunity to study forest ecology in a place where there is still enough time to design and implement large-scale conservation plans that will allow sustainable development of the island's resources.

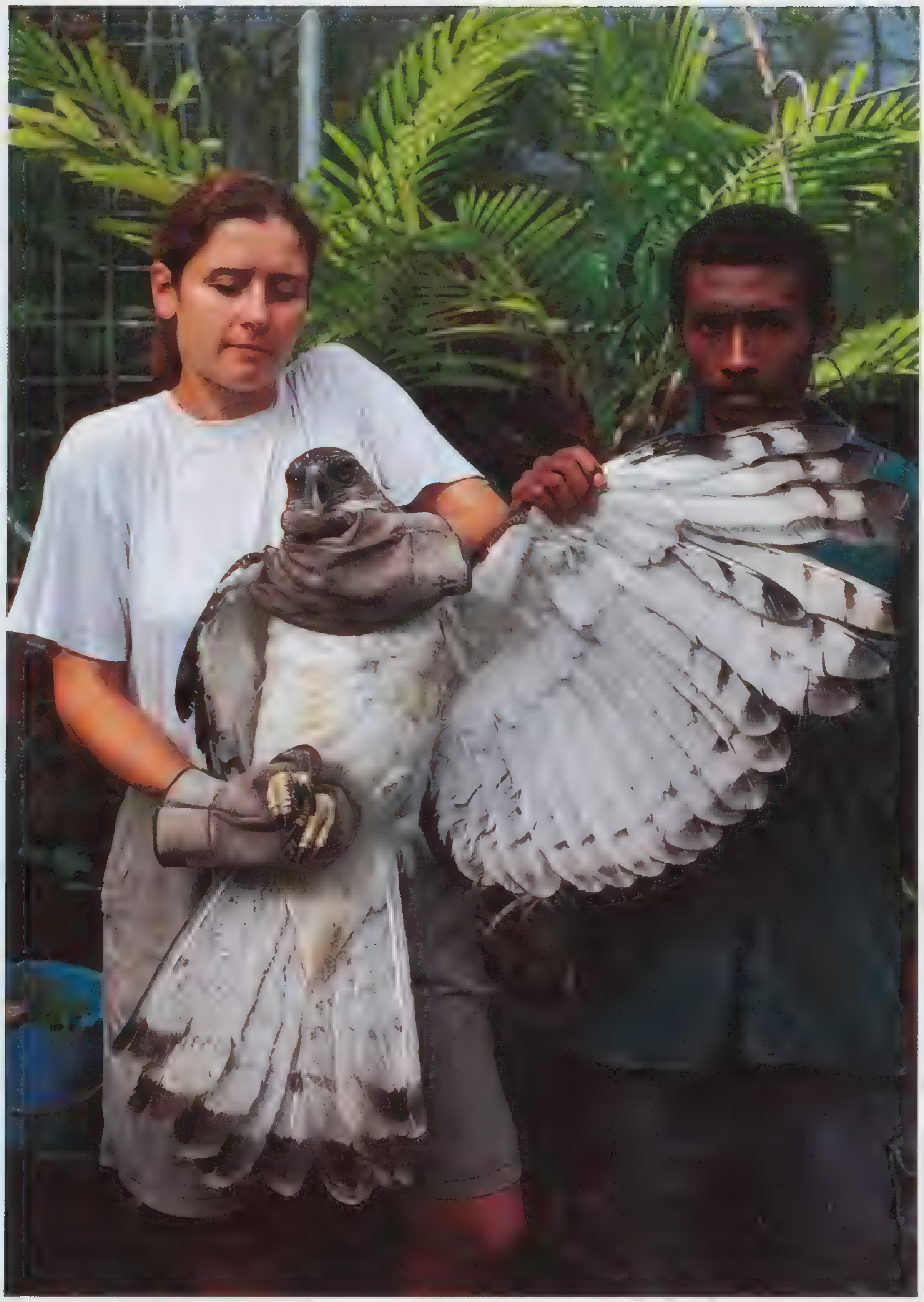
My primary study areas in the Crater Mountain Wildlife Management Area lay on the border of the Eastern Highlands and Chimbu provinces—a region with forest-covered mountains ranging in altitude from 300 to 3,000 meters above sea level on the southern edge of the Central Cordillera. A consortium of conservation organizations led by the Research and Conservation Foundation of Papua New Guinea persuaded the local villagers in this area to preserve the forest and its biodiversity as much as possible. In return, the consortium is helping the people to explore ways that they can earn income through sustainable uses of their natural resources—for example, by providing guides and accommodations for tourists who want to see the rainforest and its wildlife. The conservation organizations involved are also training and employing field assistants to work on research projects such as the New Guinea Eagle study.

As part of my fieldwork, I made a great effort to find knowledgeable local guides and then checked the reports they provided about eagle territories and nest sites. This was immensely time-consuming but also very enjoyable. I established a pattern of four- to five-week excursions, in which I would walk to places in the forest that the guides said contained eagles. I would also sometimes use an off-road motorcycle to visit some of the study areas in the Western Highlands. As soon as I met my guides in each area, I was taken care of as one of their own, but traveling alone on the Highlands Highway or on dirt roads leading into the mountains was sometimes dangerous. Until quite recently, many of the indigenous tribes of New Guinea were engaged in frequent warfare with each other. Although disputes are usually resolved now by paying compensation, blood feuds are still quite common. As a stranger passing through an unfamiliar area, you never know how you'll be received by the local people. And to make matters worse, more than 800 distinct languages are spoken in New Guinea, making communication difficult at best.

Once as I was driving over the crest of a high pass in bad weather, a gang attacked me,



One of New Guinea's more unusual birds is the Feline Owlet-Nightjar. The species in this group are poorly known. The one above was caught by hand from its daytime roosting spot.



Annie Williams and Jim show the feather pattern of a three-year-old female New Guinea Eagle at the Rainforest Habitat Center at Lae. This may be the only individual of this species in captivity in the entire world. The black-and-white barring on the underside of its wings and tail takes several years to develop.

shouting and throwing rocks. But the rocks didn't concern me as much as the two burley, machete-wielding men running toward me from both sides of the road. With a flick of my wrist on the motorcycle's accelerator handle, I managed to go just fast enough to get between them safely, leaving them slashing at thin air.

On another occasion, I was riding down a steep, muddy track after a heavy rain, when I saw a crowd of angry villagers gathered ahead, apparently trying to loot a coffee truck that was stuck in the mud. There was no room to pass, so I jammed on my brakes. My front wheel locked up, and down I went, into the mud. As I hurriedly got up, I saw some men running toward me from the bank above the road. Reflexively, I shouted "Kawee!" ("All right!")—one of only 30 or so words I knew in Jiwaka, the local dialect. The men stopped in their tracks and smiled, unable to believe that a white stranger could speak their tongue. Their ranks then parted, and an elderly man came forward and handed me two really tasty sweet bananas.

In the beginning, I worked from three villages, but I quickly refined the search to a smaller area around one village, where I found evidence of up to five separate eagle territories. I also found two young men at this village, both of whom had the requisite patience and aptitude to be excellent field assistants. Their names were Smith Asoyama and Amos Hatwara of the Gimi People.

We forged a core team of three, but we occasionally employed other assistants when they were needed. From a base camp, we would search and listen for as long as our supplies lasted. Sometimes we spent 10 days in an area before finding any eagles. Fortunately, New Guinea Eagles have a distinctive call—almost like a foghorn or a plucked bowstring—that carries a long distance through the forest. Hearing this call often helped us find the eagles high in the thick forest canopy. I used a tape recorder and recorded these calls whenever I could get close enough to the birds. At one site I recorded a pair making chickenlike calls that were previously undescribed in the scientific literature—which shows just how little is known about this species.

I later analyzed the recordings, with considerable help from the Cornell Lab of Ornithology's Library of Natural Sounds, which now has my original tapes. A plausible explanation for the birds' long-range call is that it allows both members of an eagle pair to keep in touch across a large territory and also alerts other eagles to their presence. This would be especially important for a species that could not soar above the canopy and maintain visual contact with other eagles. Although some authors claim that they have seen these eagles soaring, we observed eight individuals in this study for a total time of 16 hours and 42 minutes and never once saw an eagle soar. The birds' chickenlike call was a contact call for close-range communication between mates, but it may also be used by juveniles as a food-begging call during the long period after they fledge when they are still fed by their parents. It was impossible for us to be certain, because all of the eagles we saw appeared to be in adult plumage. Without having the opportunity to mark individuals at a nest, we could only speculate.

At one nest site, two days' walk from a remote village, we spent 42 days over a four-month period recording the habitat use and behavior of a pair of eagles. Remarkably, all of our observations, both visual and auditory, occurred within an area of .25 square kilometers. Although we made long forays into the surrounding valleys, we were never able to detect the activities of the eagles in a larger area. We spent periods of up to five hours following the male as he hunted, flying from crown to crown in the canopy. This was exciting and demanded a combination of stealth—to avoid disturbing the bird—and speed—so we wouldn't lose him in the thick foliage. On one occasion, we saw him carrying a freshly killed ring-tailed possum, and we found the fresh, uneaten remains of four wallabies on the ground beneath his favorite perches. Overall, these remains—together with the prey remains I took from the recently vacated nest—showed that the birds' diet was composed of possums, which are caught as they sleep in the canopy during the day, and of terrestrial species such as scrubfowl, juvenile cassowaries, and wallabies.

We spent a total of 212 days in the forest, during which time we saw eagles on 24 occasions and heard them 120 times—which gives you an idea how difficult it is to study animals in such dense foliage and inhospitable terrain. We found the home ranges of five eagle pairs (based on the individual plumage differences of the eagles) on the southeastern side of Crater Mountain. Mapping these sites, we determined that the average territory of these birds was 20 to 50 square kilometers. We did not find evidence of any systematic disturbance or hunting of the eagles by humans in this area. But this contrasted sharply with the situation in three other areas of the Western Highlands province, where villagers showed me their large eagle feather collections, which they use as ceremonial decorations on special occasions. Hunters from one of the villages on the northwestern edge of the Kubor Range had killed four eagles in the preceding 18 months. Information from hunters of different language groups is often unreliable and difficult to gather, so these fragments of information were valuable in building up a picture of the eagle's status.

Although our small team did not find an active nest, we were able to learn something about the ecology and status of this top predator in New Guinea's montane rainforest. Further, the work will be continued by my friends and colleagues, Smith Asoyama and Amos Hatwara, who are now fully trained in the techniques necessary to monitor the eagles in the forest near their village. If they find an active nest, The Peregrine Fund plans to support further intensive studies to learn more about the breeding biology of the New Guinea Eagle. ■

Mark Watson is a biologist who lives in the United Kingdom. Funding for his project was generously provided by The Peregrine Fund, the San Diego Zoo, the Walt Disney Company Foundation, and the Chevron Company.

The author (above right) takes a variety of measurements from the captive New Guinea Eagle at the Rainforest Habitat Center. Weighing nearly five kilograms, the bird was difficult to hold. At left, Mone of New Guinea's Melpa people shows off his collection of eagle feathers. He uses the feathers as personal decorations in traditional ceremonies.

Where Have All the Hummingbirds Gone?

BY RACHEL CLARK

Just because fewer hummingbirds are visiting your feeders, it doesn't necessarily mean that these colorful birds are vanishing

If you fill a feeder with sugar water and hang it outside every summer, you've probably succumbed to the wonderful addiction of attracting hummingbirds. And if you pay close attention to how many birds visit and when they're visiting, you may have noticed that some years—or even some times of year—are better for hummingbird visits than others.

What determines how many hummers stop by for a drink? And if hardly any birds turn up in a season, is there reason to be concerned? In these days of increasing human encroachment on wildlife habitats, it's easy to assume the worst when fewer than usual of our favorite birds show up at our feeders. What if the birds' populations have plummeted because of habitat loss in their wintering grounds? Perhaps the landscape has become so fragmented and degraded that their migration path doesn't furnish enough food to maintain them on their long journey. What if a large-scale weather event—perhaps induced by global climate change—has destroyed most of their winter food supply?

I spent this past summer at the Rocky Mountain Biological Laboratory (RMBL) in Colorado, where researchers have caught, banded, and studied hummingbirds for the last three decades. And I discovered that even there, in the land of plentiful wildflowers and nesting habitat, hummingbird populations appear to fluctuate dramatically over the years. But I had a chance to talk with two of the researchers who study hummingbirds, and they say that more is going on than meets the eye.

William Calder and David Inouye know a lot about hummingbirds—they've been coming to the RMBL for nearly 30 years. Bill Calder, a biologist at the University of Arizona in Tucson, first alerted me to the apparent lack of hummingbirds flitting around his feeder this past summer. But Calder's observations are never superficial—and he is careful not to jump to the wrong conclusions. He had plenty of well-thought-out explanations for the "missing" birds.

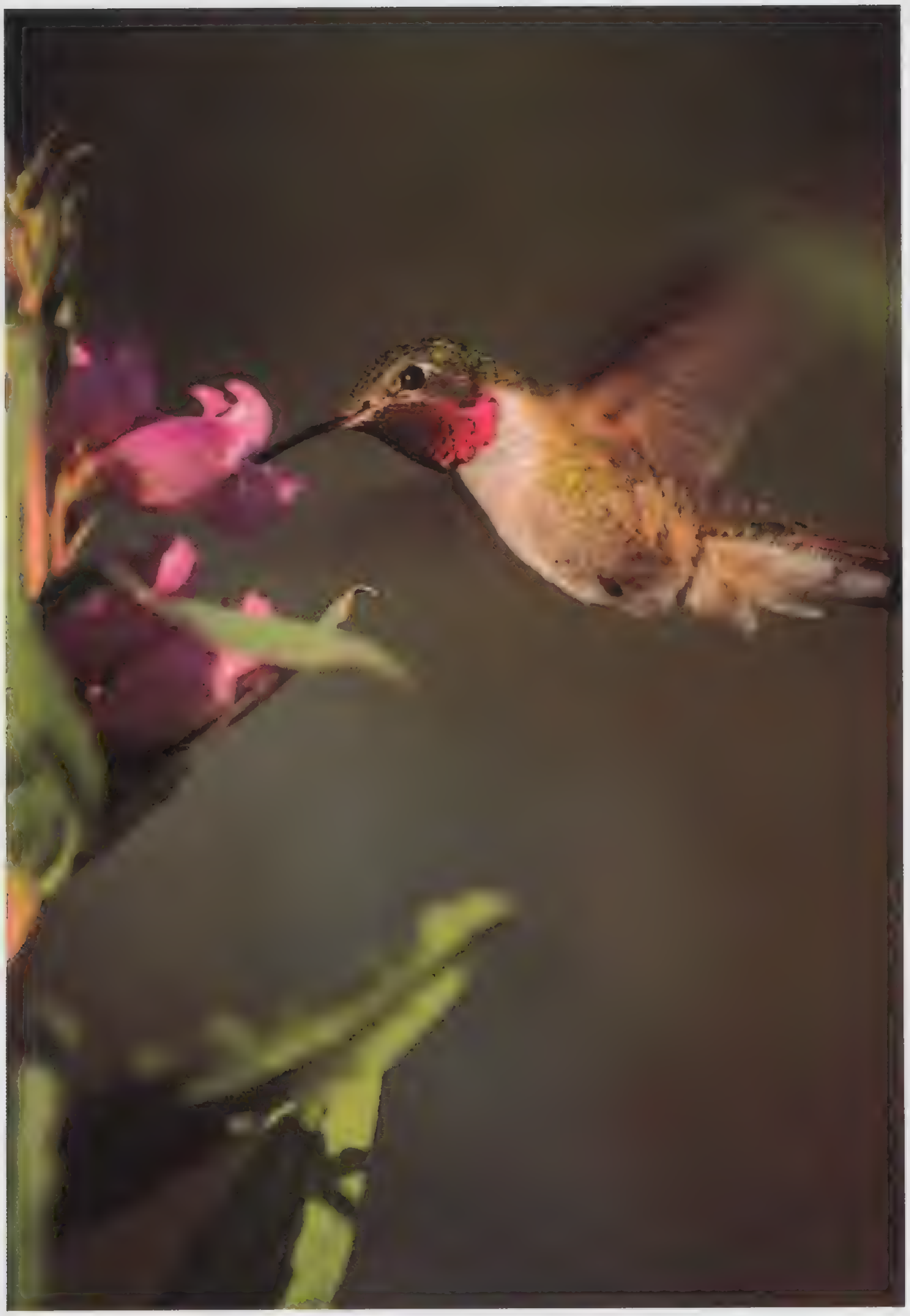
"Just because you don't have as many birds coming to your feeder, it doesn't mean that they're not out there," he told me. Calder brought up the relationship between hummingbird feeder visits and flower abundance. And he suggested I talk in depth with David Inouye, who specifically studied this link.

Inouye is a researcher at the University of Maryland. He works at the RMBL every summer, studying flower pollination and phenology and hummingbird biology. I first met him on the deck of his mountain cabin. Looking southwest over the expansive flower-covered

For backyard feeder bird watchers, few birds are as fascinating to watch as hummingbirds. Like tiny feathered jewels, they dazzle us with their brilliant colors and energetic style of flight. It's no wonder that people become concerned when fewer hummingbirds show up at their feeders. But don't assume the worst. If flowers are unusually abundant, the birds might be forsaking feeders to dine on nutritious wildflower nectar. At right, a female Rufous Hummingbird sips nectar from a larkspur blossom.

MARK J. BILAK

TIM FITZHARRIS/MINDEN PICTURES



Broad-tailed Hummingbirds, like the adult male above, and Rufous Hummingbirds are the most frequently seen species at the Rocky Mountain Biological Laboratory in Colorado (far right above). The lush valleys and mountainsides nearby (at right) provide a bountiful selection of wildflowers, which often outcompete the Lab's sugar-water feeders for the hummingbirds' attention.

hillside, our view was filled by the rocky hulk of Gothic Mountain, while behind us loomed a flickering green and gray patch of quaking aspens. Hanging inches from my head, a red-rimmed carafe of nectar lured Rufous and Broad-tailed hummingbirds to Inouye's doorstep. The disparity between his soft-spoken manner and the bright metallic sound made by the male Broad-tailed Hummingbirds as they swooped in was striking.

Along with Calder and Nick Waser, Inouye has been paying close attention to the hummingbirds visiting their feeders. For 18 years, they've been catching and banding Broad-tailed Hummingbirds while also tracking local flower abundance. And they've shown that when there's an abundance of hummingbird-attracting flowers around, fewer birds show up at their feeders. Alternatively, when flowers are fewer more birds fly in for a sugar water snack—and they come from farther away than usual. So when you've got a bumper crop of hummingbird-pollinated flowers, you might just see fewer birds visiting your feeder—why should they bother with sugar water when they can get nectar that's rich in amino acids (the essential protein building blocks required by every living thing) directly from flowers? But when fewer flowers are blooming, the hummers may rely more heavily on your feeder than ever.

Even more striking evidence for this relationship comes from their data, which show that feeder visits can vary even within a single summer. At the start of summer, when blooms are few, more birds visit feeders than do a little later in the summer when flowers abound.

Inouye thinks these observations are important for a number of reasons. For one thing, ornithologists have long used banding techniques to help estimate birds' population densities. With hummingbirds, it's clear that these estimates could be off—imagine banding feeder-caught birds in a year that's teeming with flowers. Fewer birds visit your feeder, so how in the world can you get an accurate estimate of actual population size if you're banding only feeder visitors? Another important result of these observations, then, is realizing how vital it is to venture farther afield when conducting hummingbird population density studies. Listening for birds, mist-netting in specific locations, and taking widespread censuses are critical for providing accurate pictures of hummingbird population densities. And Inouye thinks that determining accurate population estimates would help researchers to understand real fluctuations in hummingbird densities and what those fluctuations mean.

"Would you like to watch me catch one?" Inouye asks as I'm taking in our conversation while my ears buzz with the nearby whir of hummingbird wings. My eyes light up. I've never seen these tiny birds so close.

"Please," I say. He steps into the cabin for a moment, then calmly returns holding a butterfly net. He is clearly a master catcher. His moves are lightning fast—yet exquisitely gentle—as he swoops the net near the feeder. He closes his hand over the tiny creature inside the net. It's a female Broad-tailed Hummingbird. Inouye holds her beak while cupping her tiny body in his palm, and I peer closely—he points out the pollen coating her beak and face. Then he shows me her wings and describes how they differ from the wings of male Broad-tailed Hummingbirds. A simple difference in wing structure—a sort of slit in the wingtip that the females don't have—accounts for the distinctive, high-pitched wing whistle made only by the males.

Then I see the tiny band around her leg. Each of the numbers circling her bracelet is no bigger than the tip of a pencil. Inouye recalls an adult female they caught in 1976 that was recaptured 11 years later, making her the oldest known wild hummingbird. Even his soft-spoken manner doesn't hide how he feels about having known that bird.

Clearly hummingbird visits to feeders are linked to flower abundance—but just what causes flower abundance to vary from one year to the next? And could that in turn affect hummingbird feeder visits?

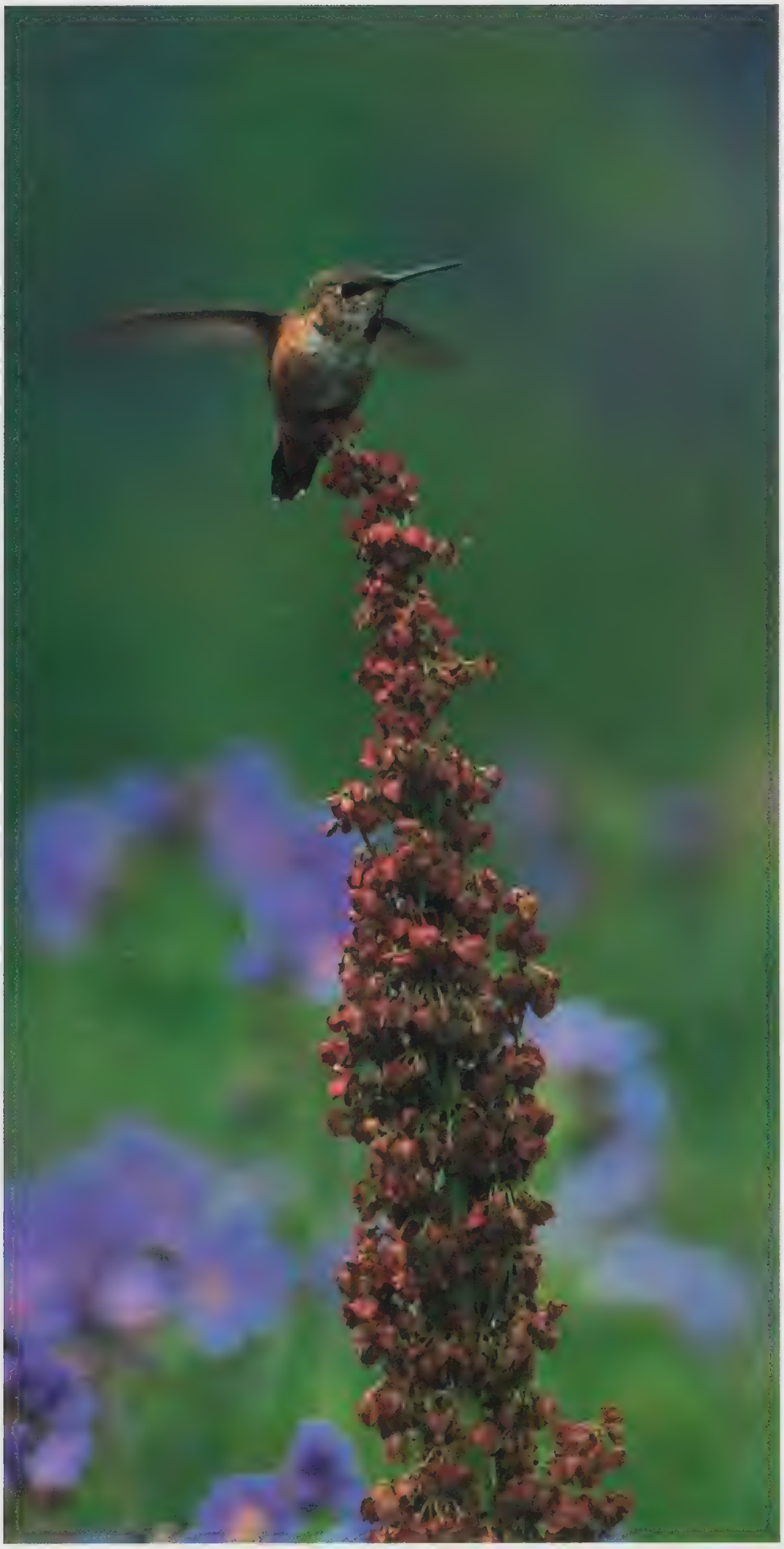
It turns out that for one type of flower—the larkspurs or delphinium species—the amount of snowfall during the previous winter affects flower abundance, whereas for many other species of flowers, a hard frost in the middle of June kills lots of flower buds. And that affects the subsequent abundance of those species' populations. So things such as temperature and amount of snowfall in a local environment can affect flower abundance, which in turn affects hummingbird feeder visits. Hence, whether you get few or many hummers flying to your feeder could depend—at least somewhat—on your local weather and environment.

After I met with Inouye, I spoke with Bill Calder, who told me some other possible explanations for the fluctuating numbers of hummingbirds at feeders. Calder's tremendous respect for science combines with a commitment to explaining its results—whether they are crystal clear or murky—in ways that refine our understanding of and appreciation for nature. He says, "You've got to be honest about uncertainty in biological systems."

His concern, in this case, is that some care-

C. CAUDILL (2)

MARK J. BILAK



"How many times do we assume a bird has died, when in fact it may have just moved somewhere more appealing?"

ful observers might see fewer hummers around and leap to the logical conclusion that hummingbird populations are declining for some human-caused reason. But he says there are lots of alternative explanations and, without understanding those possibilities, it's difficult to make any real progress in determining whether hummingbirds are being hit hard by things like habitat loss or simply responding to natural, small-scale factors that affect feeder visits.

"I've seen hummingbirds ignore tons of red Ipomopsis in favor of plants covered with aphids," recalls Calder. "And I've seen hummingbirds hovering in the air catching gnats." When females are making eggs, they need plenty of protein, fat, and minerals. "I've even seen them pecking at a road surface recently sprayed with the salt, magnesium chloride," he adds. So at some times of the year, hummingbirds may be lured away from feeders by an essential nutrient that they just can't get from sugar water (but beware of adding anything to your sugar water because nutrition-enriched nectar can quickly turn rancid and make birds sick).

"You might get some fluctuation in hummingbird numbers from year to year because of unequal human sampling effort," he explains. "Some people may be better at catching hummingbirds than others." Or you could see fluctuations because of simple range shifts—birds follow flowers, and flower ranges frequently change when you tinker with the landscape. Imagine a clear-cut forest that fills with grasses and wildflowers first. Soon it becomes saturated with saplings that in turn grow to shade out the understory. Then some of the flowers that once lived there—and perhaps attracted hummingbirds—simply disappear.

Then there's the unexpected passage of birds from one location to another. In many cases, researchers assume that the birds they band are part of a resident population—or at least a population that returns every year to the same geographic spot. If a banded bird doesn't show up for a year or more, researchers generally assume that the bird died. But Calder cites anecdotal evidence that refutes this assumption. For example, Calder recalls one hummingbird that his wife Lorene banded at the RMBL in 1994. "Normally, hummingbirds have high site fidelity—they tend to return to the same spot year after year," says Calder. But this hummingbird didn't show up in 1995—or in 1996 or 1997—so he thought she had died. "That's the assumption you make when a banded bird doesn't return to a site," he remarks, "but this bird gave us a surprise. She turned up in Salida, Colorado, in the summer of 1998." Apparently this bird had had her fill of the cold spring in Gothic during 1995, and she flew about 60 miles away to find greener and warmer pastures on the eastern slope of the mountain range. "Now she's moved over there to live happily ever after!" exclaims Calder. "How many times do we assume a bird has died, when in fact it may have just moved somewhere more appealing?"

But sometimes, infrequent feeder visits *do* mean that hummingbird populations are being impacted on a larger, population-wide scale. To illustrate, Calder tells me about the tardy Rufous Hummingbirds. Each year he tries to keep tabs on the Rufous Hummingbird migration. At the beginning of last year's season, he saw very few of these birds migrating north through northwest Sonora, Mexico. He heard from other ornithologists that the Rufous Hummingbirds had shown up late in Montana, southwest Washington, and Alaska, where they breed. And in Gothic, Colorado, where the RMBL is nestled, Calder only caught about 200 birds at his feeder last summer—far fewer than the 600 he sometimes catches in a season. They were also late at Sapillo Creek, New Mexico, where the Calders band each August.

But then he stopped at Sapillo Creek near the end of August and caught more than 100 birds the first day. That number parallels what the catch usually is in early to mid-August. Last year the catch rate was slow in early to mid-August and had jumped up by the end of the month. Calder explains that "the birds were just late leaving for their migration last year. Something in their overwintering grounds may have triggered it. Maybe it was heavy rain that knocked off some of their flower supply. Or it could have been a year with exceptionally light rain, which could lead to less nectar in the flowers."

"Something was late all the way around that affected the birds' migration cycle. This effect had wide-ranging implications," he ponders. In this case, bird numbers were affected over a large geographic area, so the birds were affected by something bigger in scale than local flower abundance or short-term nutrient requirements. And the only way to distinguish between this large-scale, belated migration, and local, small-scale effects was to know that Rufous Hummingbirds were visiting feeders less often over their *entire* migratory range.

So, if you're missing hummingbirds at your feeder, think about whether you've got a case of the feeder-flower face-off or whether local birds might simply be foraging for food that's more nutritious than sugar water. For researchers like Inouye and Calder, pinpointing the underlying reasons for fluctuating feeder visits is critical to understanding local versus large-scale population swings. If you've got fewer feeder visits and you don't see any local explanation for it, then maybe you've got a declining population of hummingbirds on your hands. Perhaps it was a bad year for reproduction, or maybe there was heavy mortality at the birds' overwintering site.

Says Inouye, "The only way to tell is by banding across sites in the birds' migratory pathway. If everyone reports a bad year for hummingbirds, then something other than local flower abundance (or other local explanations) is going on." And determining the factors underlying fluctuations in whole populations, whether natural or human-induced, is a whole other story. ■

According to researcher Bill Calder, Rufous Hummingbirds (such as the adult male at left and the juvenile male on the facing page) did not come north as early or in as large numbers this past summer as in recent years. Perhaps this was caused by a weather-related shortage of flowers on their wintering grounds or some other temporary factor. The only way to distinguish between large-scale population changes and small-scale local changes is to monitor hummingbirds over their entire range.

JIM ROETZEL

Rachel Clark is a freelance writer based in Ithaca, New York. This is her first article for this magazine.

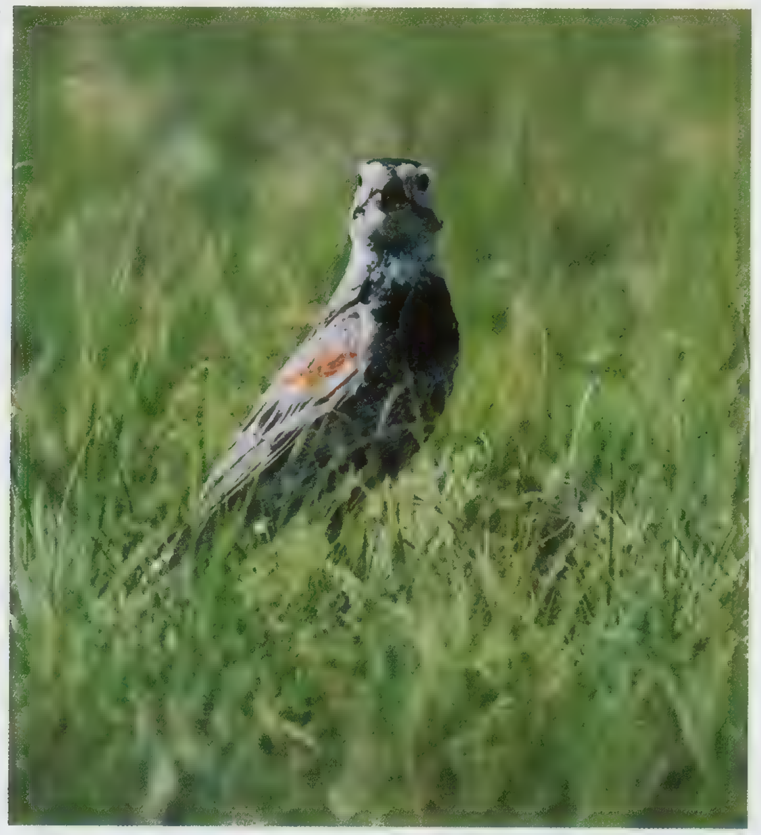
HIGH PLAINS DRIFTERS

BY MARCIA CLOUSER

Skylarking in the arid grasslands of Wyoming

ROBIN CLOUSER

SAM FRIED



It was a drought year, and the grasslands around the old Swedish homestead (above) were parched, with bare patches everywhere. A small bird sprang into the air, hovering and singing, then drifted slowly to the grass like a feather. He craned his neck, revealing a curved chestnut epaulette and jaunty black cap and bib—an adult male McCown's Longspur (left).

It was a cold morning in July when I set out to find longspurs—46 degrees and spitting rain as I walked up the horse lane. Uncle Clarence had put the brake on the windmill against the scudding fog. Small birds usually hunker down in wind, so it didn't look good for longspurs.

My husband and I were visiting an old Swedish homestead northwest of Cheyenne, Wyoming, in the drought year of 1994. Crow Creek and Horse Creek barely ran water. On our route from Pawnee Grasslands in Colorado, dry-land farmers were cutting stunted wheat for hay as we climbed shelf after shelf up the high plains to the ranch at 7,650 feet. The shortgrass prairie was fried to a crisp. "Melt from two hails," said my pioneer-stoic Aunt Lucille, "that's what there was for rain. Hardly any snow before that and hardly any stuck." Thunderheads blew in at sunset after we got in, but no rain—till this chary, low-skimming mist flapped in over the shortgrass hills at dawn, the first moisture in a long time.

By the calendar and distribution maps, there should be longspurs out there. But was it just too tough this year? Had they gone somewhere else?

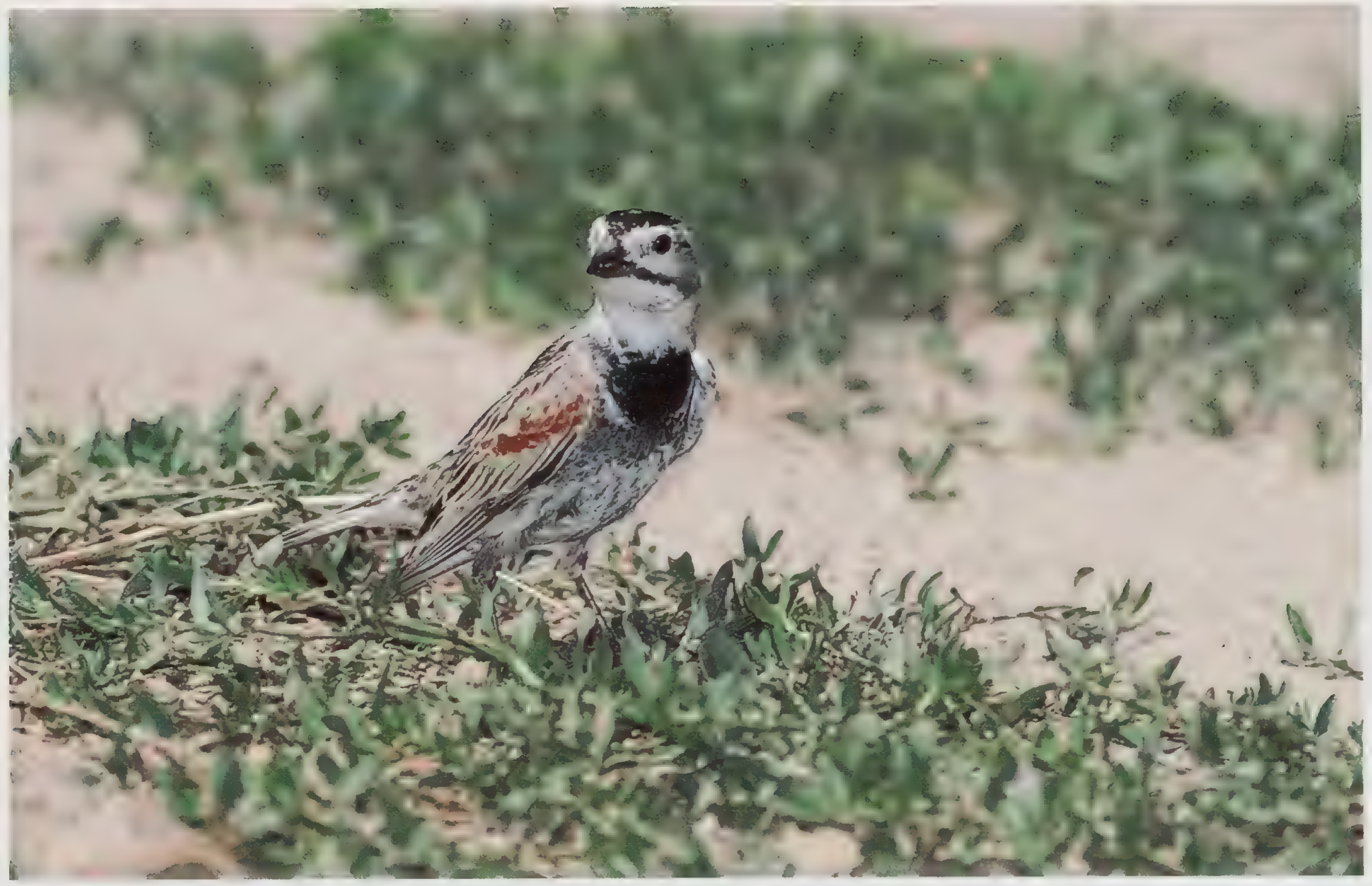
Back in Pennsylvania's green woods, where I started birding 10 years ago, the ungreen West of my childhood haunted me. I'm a pioneer's grandkid who left too soon: BB, Before Birding. *Oh gee whillikers* is about all I remembered. That's what the meadowlark sang on other ranches, but to Aunt Lucille it said, *Ol' Dougal Whittaker*, the name of a Scottish homesteader on Horse Creek. After years of flipping past those squat, perky longspurs in my field guides, I finally decided it was time to search for them, drought or no drought.

Two species of longspurs breed in the Lower 48 states: Chestnut-collared and McCown's longspurs, both found in southeastern Wyoming. I rashly hoped for both. Actually we'd seen a longspur the day before on the broiled hills of Pawnee Grasslands. We screeched to a stop on Colorado Route 77 to take a cross-country auto tour laid out by the Greeley Audubon Society—so said the grit-shredded sign. Ground temperature at noon was over 95 degrees. Prickly pear cactus, grasses, forbs, and fence posts threw thin bits of shade, where Horned Larks, Vesper Sparrows, and Western Meadowlarks (was that a Cassin's Sparrow?) stood and panted, open-beaked, for a luxurious quarter-minute in one degree less heat, then bustled off after a hot cricket. Was anything *breeding* in these stressed conditions?

We idled up the crest of a ridge, windows down. A small bird sprang into the air to hover and sing—too far from the car for me to hear—then, like a slow feather, drifted down. I got him in my binos. Black markings on slate gray head and upper body, black T on white tail: McCown's Longspur. He landed on bare grit between bunchgrasses and craned his neck to check us out. Yes: a curved chestnut epaulette and jaunty black cap and bib. When he moved, he didn't hop; he walked like a chicken in my grandma's yard, one foot at a time, poking his head out ahead of every step. Suddenly he chased a grasshopper on foot through the stubble and squashed the whole juicy body in his bill—and made off with it into the sterile moonscape that wasn't so sterile after all.

All around us, other silhouetted forms darted among the fried grasses, threw their tiny fluttering bodies against the fierce sun to sing (unheard by us) and drift back to earth. Maybe they weren't breeding, but they certainly were courting. I wanted more. I wanted out of the car ("Please remain inside your car," the sign said), and I wanted to hear the songs.

The next day, storm day on the ranch, was my big chance. Rain splatted on my poncho. The misty, treeless, deep-rolling prairie looked like Sir Walter Scott's mizzling moors. Next to the horse lane was a strip of Conservation Reserve Program (CRP) land grown two-foot tall in



HERBERT CLARKE

The longspurs relaxed and went around me as I crouched like a shiny blue cow in their midst

grasses: perfect refuge for the Brewer's Sparrows that perched on the barbed wire. Last night in yellow kitchen light, my cousin the foreman had quietly voiced the ranchers' despairing consensus: it was time to cut the CRP for hay. Secretly I hoped not—for the Brewer's Sparrows, for the Ferruginous Hawks that had stood like griffins on a lip of prairie last summer, for the six Northern Harriers gallivanting over the waving CRP grasses last night. Opposite the CRP, on the other side of the horse lane, lay the ranch's close-cropped corrals and big three-quarter-section pasture of virgin shortgrass: overgrazed, dried out, stressed grasses, with bare patches.

A sad sight, I thought. I was wrong. It was a paradise for McCown's Longspurs. I had accidentally stumbled onto prime McCown's habitat—overgrazed pasture. McCown's Longspurs and Horned Larks, it turns out, prefer semi-bare areas for nesting and foraging. Observers in North Dakota, Minnesota, and Saskatchewan report seeing McCown's Longspurs almost exclusively during droughts. Western Meadowlarks and Lark Buntings prefer denser vegetation—like the CRP and the ungrazed brushy area along a sunken creek north of the homestead. Chestnut-collared Longspurs choose a habitat somewhere in between: not dense, not sparse either, but moister and containing mid-height grasses. By divvying up the habitat like this, the guild of high-plains gleaners can all adapt and share it.

As soon as I got up the first ridge in the horse lane, I saw small birds jumping into the sky, showing white in their tails. I focused on one downwind. Sure enough, a male McCown's Longspur. And another and another—they hung like baubles about 25 feet up in the wind, fluttering mightily. For the next three hours, I camped under a swell of the prairie, overlooking a crease of land that used to run a trickle of water, and I listened to the birds' bell-like songs. Five pronghorns appeared on the far side, noted my arrival, and withdrew over the next ridge.

The longspurs relaxed and went around me as I crouched like a shiny blue cow in their midst. The rain was too glorious for them to fuss at me. They landed, flew by, walked right up within 10 or 12 feet. The short grasses and mountain begonias greened up amazingly in the mist. Insects that had been waiting months to hatch popped out. The longspurs stuffed their beaks with flies, hoppers, and bugs, then flew off low—sometimes delivering fragments of song en route, even through full beaks. One female jumped 10 inches into the air to snag a fly and then did it again to peck at something at the top of a small plant. She was plain light gray-brown, dotted on her cap, and she moved like the male. (Unless some of the "females" I saw were in fact fledglings, I saw no young.) She walked back toward me, circled around a clump of grass, settled in beside it, and disappeared. I thoroughly inspected every place before sitting down after that, to make sure I didn't squash somebody.

I was jubilant. The high plains of North America have "Sky Larks" after all—or a reasonable facsimile. Ever since I saw a European Sky Lark, I have been jealous for my continent. (With the exception of a small, introduced population of Sky Larks on Vancouver Island and the San Juan Islands and rare accidentals, Sky Larks are not found in North America.) The Sky Lark sprang out of a hill field near Urbino campground in Italy, spiraled up on fluttering wings, caroled an amazingly long-winded song, then dropped like a plumb bob. I used to think that Shelley overdid it in his famous ode to the bird, but that performance actually outdid the poem. I came home pining for the putative filler of this natural niche. Meadowlarks were no help. They belong to the Icteridae or blackbird family, not the Alaudidae or larks, and they are way too chunky to sing hanging up in the air, though they're great at fence-post arias.

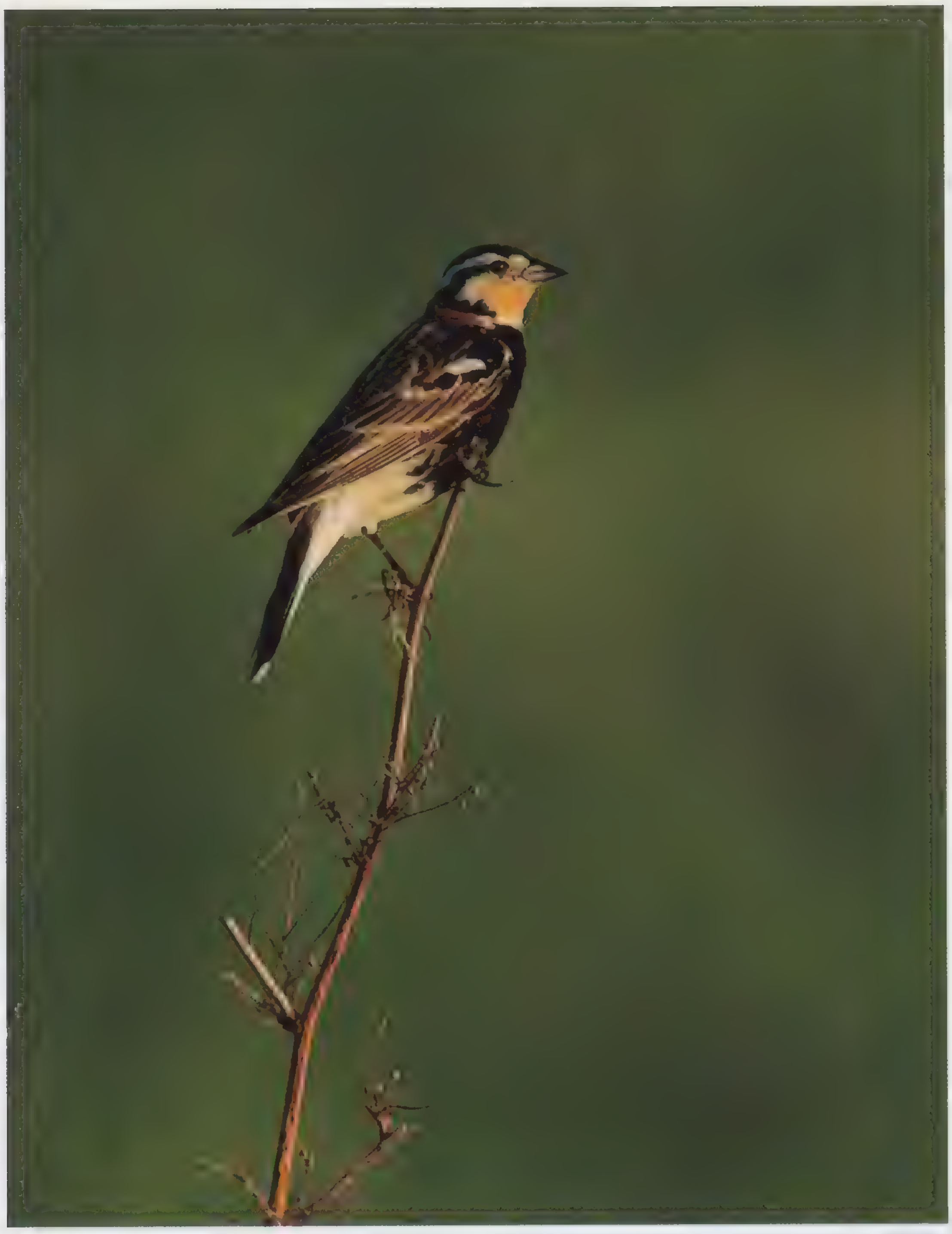
Our only true North American species of lark, the Horned Lark, has the peak of its breeding season in April, before I can get west. They're almost mum in summer, in my experience. Sleek, low-slung, outfitted with Hermes racing "horns," the Horned Lark is said to deliver long, rather weak-voiced aerial songs in March or April. Once, in a high opening in the Laramie Peaks, I saw a Horned Lark lift off his low rock and twitter softly for 10 seconds about 20 feet up. But it was late July and his heart wasn't in it.

Then I read that three of the four species of longspurs "sing in a display flight." Before the bird was named for Captain John P. McCown,

ROBIN CLOUSER

On the other side of the horse lane from the Conservation Reserve Program land was the big three-quarter section of virgin shortgrass (below). It was overgrazed, dried out, stressed—and, as it turned out, prime habitat for the McCown's Longspur (at left).

CLIFF BEITTEL



The bird had a stunning red-brown-orange nape and a fancy black and white and pale yellow face, much darker than the gray face of a male McCown's Longspur. This harlequin (above) was clearly a Chestnut-collared Longspur.

who shot one in a passel of "Shore Larks" (Horned Larks) in 1851, early explorers, including Meriwether Lewis, named this little gray-black bird after its Sky-Lark-like behavior, not its long rear toenail: "Ground Lark," "Black-breasted Lark Bunting," "Rufous-winged Lark Bunting." That clinched this trip.

If you had sat beside me in the shortgrass and listened above the river of wind, you would have heard a sound like someone regularly ringing little bells close or far across the high prairie. Each male McCown's Longspur begins his song with a bell-like tinkling, then goes into his own idiosyncratic little warbling melody. Each two-part song lasts about 10 seconds. Sometimes they give more than one song before descending. I could locate the next skylarking longspur by ear. The full-length song was delivered only from the air as far as I saw.

Unlike Sky Larks and Horned Larks, McCown's Longspurs do not simply drop as they descend. They fix their wings in a deep V at a 45-degree-angle from the body and glide down (sometimes still singing) with cunning little tail adjustments. Whether going to see their ladyloves or to pounce on bugs, I could not tell, because they would vanish immediately into the sparse grass.

Sometimes three or four McCown's Longspurs came skylarking at once over my little crease. If each was true to one turf, there were 12 to 15 pairs in that small part of the pasture. In my mind's eye, all the prairie in Laramie County was full up with McCown's Longspurs joyriding on the skuddy mist.

Other birds were also moving. Barn Swallows and Horned Larks swooped through the crease of prairie, zigzagging after newly hatched flies. A Merlin stooped on Clarence's hayfield. Unidentified longspur- or sparrow-shaped birds sped past, 10 or 15 feet up, hugging the contour of the land, back and forth, as if commuting up the draw to where the cattle and stock tank stood. Could these be Chestnut-collared Longspurs? Among the many excited bird songs, one sounded like a miniature meadowlark—that's how I described it in my field notes—a clue that meant nothing to me at the time but that later turned up as a description of the Chestnut-collared Longspur's song. But the swift little travelers never lit near the blue cow to give an account of themselves. Four gigantic American White Pelicans lumbered over, circled indecisively, and finally headed west.

The pronghorns, meanwhile, were agitated. In the hours I'd sat in the pasture, more kept coming over the far ridge to eye me, paw, and mill about. At one point 14 of them stood on the first shelf off the draw—females, young, and males—and three more at the top of the ridge. The 17 herded up and headed south, perhaps to put the ridge between me and them for good. But then they all came galloping back and vanished up the draw to my right. Then they tore back across the top of the ridge. I figured a blue cow was too much for them. Uncle Cecil swore you could lure the curious critters right up to you by flashing a white handkerchief.

When I finally rose from my longspur watch and followed the cow path up the draw, a newborn pronghorn stumbled to its feet about 25 yards from me. So *this* was what the white-and-tan herd was all stirred up about. We stared at each other. How many hours old was it? The young pronghorn stood solidly. It was wet, but everything was wet. It trembled slightly but didn't lurch or fall. When I moved my head to check a bird that flew past, the young pronghorn moved off a few steps, stood still, moved farther, stood still, and kept this up till it got down the draw and behind a fold of

EL class

The Ultimate Birding Glass… No Compromises

New "E L Class" birding binoculars represent a radical breakthrough in premium optical technology from Swarovski Optik. In optical performance ...wide field of view with great depth of focus, weight–27.5oz, close focus–6ft, and a narrow tube "Grip-ability" for hand comfort, perfection was achieved. No compromises were allowed in the E L Class design* or manufacture.

Available in 8.5 X 42 and 10 X 42 specifications, the new EL's have rugged, light weight magnesium alloy housings, and an entirely new optical system delivering extreme image sharpness and brilliant, neutral color transmission.

There are no other birding binoculars on the planet as good as the new E L's from Swarovski. See what no compromising means for your birding. Call 800-426-3089 or visit www.swarovskioptik.com for more information.

SWAROVSKI
OPTIK

Swarovski Optik North America, Ltd., 2 Slater Road, Cranston, RI 02920

*patent applied for

The Birds of North America

"The definitive biographical resource in North American ornithology for a century to come."—*Living Bird*, **Spring 1998**

Purchase your charter copy of *The Birds of North America* now and save more than $1,000 off the list price. Buy the entire 18-volume set (more than 700 species accounts) for one payment of $2,275 or three annual installments of $875 each. Please add $225 for shipping and handling.

Don't miss this special opportunity. Order your copy today.

The Birds of North America, P.O. Box 1897, Lawrence, Kansas 66044
(800) 627-0629, extension 224; e-mail: <abonds@allenpress.com>; website: <www.birdsofna.org>.

Going Birding?

Be sure you have the books, optics, and birding gear that will make your trip a success. ***The Birder's Catalog*** is a goldmine of birding products and resources.

Peterson Field Guides
Eastern Birds' Nests
National Geographic
Birds
West Malaysia and Singapore
A Birder's Guide to the Rio Grande Valley
Birding of Nepal
The Birds of Prey of Australia
A Field Guide
David Attenborough
The Life of Birds
The Birds of the Western Palearctic

Call for a free ***Birder's Catalog*** *today!*

ABA Sales

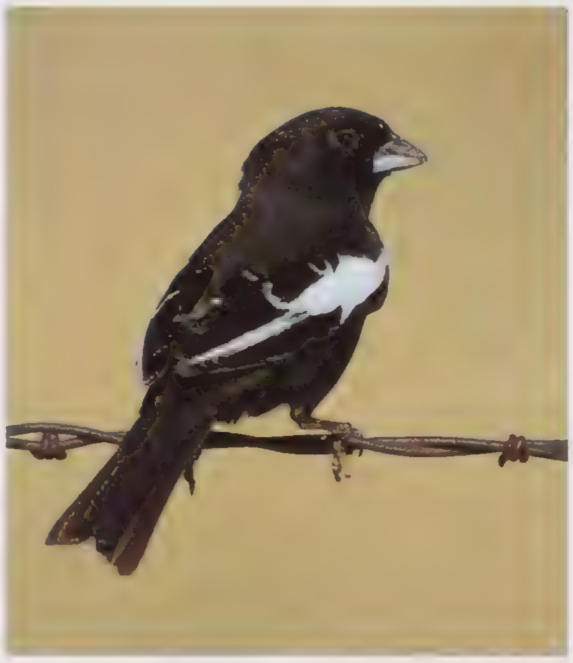
Specializing in books, optics, and accessories for birders.
PO Box 6599, Colorado Springs, CO 80934
Phone: 800/533-2473
Website: www.americanbirding.org/adcornell.htm

prairie. Meanwhile I did the same thing in the opposite direction. I had no need to be thought of as a baby-napper by 17 irate pronghorns.

All the way to the water tank, single and paired small birds whizzed by me low, with and without white in their tails, too speedy to identify. Finally I headed back to the horse lane and made for the house snuggled low in the prairie. At 7,650 feet, this ascending wedge of land is the divide between the South and North Platte rivers; this is what got Granville Dodge and the Union Pacific over the Rockies. This is the land settled by Scots, who expected to get rich from cattle like the new lairds got rich from sheep in the Highlands. I half expected to see Tom Horn trot by headed for the old Swan Ranch up on the Chugwater.

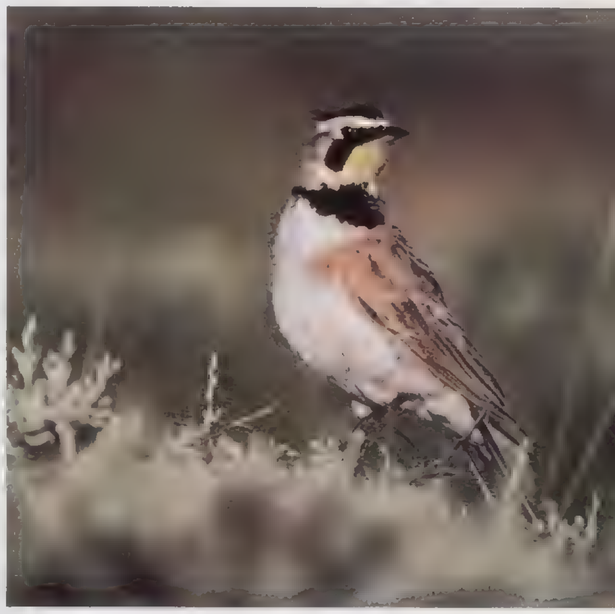
What came instead was a small dark bird that sat on the barbed wire just like the Brewer's Sparrows. But when I focused on this one, I sucked in my breath. He had a stunningly bright red-brown-orange nape, and a very fancy black-and-white and pale-yellow face—much brighter than the catbird-gray face of a male McCown's Longspur. This harlequin was a male Chestnut-collared Longspur. How velvety his black breast and belly, how much darker the brown streaks on his back than on the McCown's, I was thinking, when a female Chestnut-collared Longspur perched beside him. Her face was dark compared with his, and she was darker overall than the tannish female McCown's Longspur. After I'd held my breath most of a minute, drinking in details, the pair turned and flew back into the corral, where they lit and moved about as if gleaning for insects in the sparse grasses. In another minute, they flew off again fast and low and disappeared over the swell.

Though I saw so many McCown's and so few Chestnut-collared longspurs, my experience with the two species may be the opposite of their true abundance. Chestnut-collared Longspurs were reported in the 1980s as being fairly common, but Breeding Bird Survey (BBS) data showed a decline in the birds' numbers in the central United States in the 1990s. McCown's Longspurs were said to be declining in numbers in the 1980s, but the BBS reported rebounding populations in the 1990s. Maybe the slate-gray birds catch up on their congeners during droughts.



TOP: SAM FRIED. BOTTOM: CLIFF BEITTEL.

My early July visit also fell in a peak nesting period for the McCown's Longspurs. The four species of gleaners in this high plains avian guild (Horned Lark, McCown's Longspur, Chestnut-collared Longspur, and Lark Bunting) stagger their peak breeding times—an adaptation that lets them occupy the same territory without having to compete excessively for food. The peak nesting period for Horned Larks falls in April. Lark Buntings concentrate their breeding from late May to mid-June. McCown's Longspurs have two peaks, in mid-May and early July. Chestnut-collared Longspurs have no peak at all, just an even spread of nesting from early May to early July.



Sleek, low-slung, and equipped with Hermes racing "horns," Horned Larks are this continent's only native true lark (above). But the two longspur species we saw as well as the Lark Bunting (left) also gave us an American version of the Sky Lark's lofty courtship song.

All four of these species will benefit from the recent disposition of a huge 50,000-acre ranch that lies west of my relatives' homestead. In an unusual joint-use arrangement, both the University of Wyoming and Colorado State University will share the Y-Cross ranch as a biological research station and agricultural education facility. The preservation of this immense tract of land as a working cattle ranch, donated in September 1997 by the family of the late Courtney Davis, will put a boundary to the ranchettes and lawns leapfrogging out of Cheyenne. A good hunk of high plains shortgrass prairie—and the longspurs and Ferruginous Hawks that use it—will be preserved.

On the way back to the house, I thought of the other North American "skylarker" we saw on this trip. Our first night, we walked out in the ranchyard to survey the brewing storm. A gigantic black thunderhead ate up the north horizon over the dry-farm strips. Against that roiling curtain, a plump Lark Bunting with white wing patches in his black tuxedo rose up, spiraling higher than I ever saw a Lark Bunting go before, at least 75 yards in the air, and sang as he circled, bringing forth the most prolonged and complex aria I ever heard from his species as he flung himself against that mountain of dark billows. What was he doing up there? An evensong? Vespers? Was he greeting the storm as if he knew what it brought? Only he knows. But now I know why he has "lark" in his name. So do they all, in my book. ■

Marcia Clouser teaches at Ursinus College and birds on nearby Spring Mountain.

BIRDING AT THE ROCK

Text by Terra Hangen
Photographs by Kevin Schafer

Once an infamous penitentiary housing the likes of mobsters Al Capone and Machinegun Kelly, Alcatraz Island now hosts scores of nesting seabirds

In a delightful twist of fate, Alcatraz Island, once home of the infamous Alcatraz Federal Penitentiary, is being taken over by large colonies of birds. Visitors' spirits will be uplifted when they see the contrast between the empty cells and crumbling walls of the old penitentiary and the vigorous seabird colonies. Before this bird renaissance, the island had a gloomy air, as you might expect in a place that for decades housed the nation's most desperate criminals. But even before the penitentiary was built, this island was a forbidding presence in San Francisco Bay.

In 1775, Don Juan Manuel de Ayala, a lieutenant in the Spanish navy, bestowed the name of Isla de los Alcatraces, or "Island of the Pelicans," upon a nearby island, now called Yerba Buena Island. He was inspired to give it this name because it appeared to be completely covered with pelicans, but he did not attempt to land at either island, because they looked bleak and offered no shelter for his ship. Later, in 1826, a British navy surveyor unwittingly transferred the name Alcatraz Island to the place that bears this name today.

From this inauspicious beginning, Alcatraz eventually became the site of the West Coast's first lighthouse, which was built in 1854 to guide ships safely through the narrow entrance to San Francisco Bay. A short time later, the island became a military fort with massive fortifications and more than 100 cannons, guarding the bay from 1859 to 1907. Concurrently, Alcatraz was used as a military prison, housing a variety of Confederate sympathizers, unruly soldiers, and suspected spies. Its use as a military prison lasted right up through 1933. And then, on January 1, 1934—in response to the crime wave that swept America during the

For 29 years, Alcatraz Island (facing page) was the toughest penal institution in the United States—a place where only the most dangerous criminals were sent. But ever since the prison closed in 1963, plants from the gardens started by the guards and their families have been spreading over the island, providing a rich habitat for numerous birds that now nest there. At left, a Western Gull stands guard on a broken piece of prison wall.

Western Gulls (above) are by far the most common nester on Alcatraz, numbering more than 500 pairs. Park naturalist Brett Carre sometimes has to move their nests away from the road, which annoys the gulls. They can pick him from a crowd of hundreds. At right, a clutch of Western Gull eggs.

Prohibition Era—Alcatraz became the nation's first maximum security prison, a place where only the most dangerous, incorrigible criminals were held. During the 29 years it was in operation, Alcatraz held an average of 264 inmates at a time. The prison has been referred to as America's Devil's Island or, by the inmates, as "Hellcatraz." But another nickname, "The Rock," was probably most apt, because the island used to consist only of rocks rising 130 feet above the sea, bare of any vegetation and lacking a source of fresh water. Exposed to almost continual winds and fog, the temperature was uncomfortably cold most of the time.

Since the prison was decommissioned in 1963, many birds have begun nesting on Alcatraz, making use of vegetation that was originally planted in gardens by the prison guards and their families but has since spread, creating a hospitable environment for a number of bird species. Alcatraz Island has been managed by the National Park Service as part of the Golden Gate National Recreation Area since 1972. The Park Service recognizes the benefits of having seabird colonies on the island and now employs researchers to study these birds and provide interpretive talks for visitors.

Each summer, Brett Carre, an interpretive ranger and natural resource specialist at Alcatraz, presents a program called "Birdland of Alcatraz" for visitors. According to Carre, the main bird species on Alcatraz is the Western Gull. In 1998, researchers counted about 510 Western Gull nests, which is higher than their five-year average. Carre says that his appreciation of these gulls has grown significantly since he began studying them. They are highly intelligent, he points out, and can recognize him in a crowd of 200 people. They sound the alarm whenever they see him, because for their safety he occasionally has to move their nests a few feet from the road—which the gulls evidently don't appreciate. These gulls mate for life, says Carre. "To get a mate, the female approaches the male, with her head held low and her voice mewing," he says. "If the male is interested, he regurgitates a piece of fish for her and that's love—they're a lifetime item!"

Cormorants had abandoned Alcatraz, but they began returning in the 1990s. "In 1999, we had more than 248 Brandt's Cormorant nests and about 19 Pelagic Cormorant nests on the western cliffs of the island," says Carre. "We also had 21 Pigeon Guillemot nests and at least one Black Oystercatcher nest." Daphne Hatch, the park's wildlife biologist, says that in 1998 the park also provided a sanctuary for about 240 Black-crowned Night-Heron and 15 Snowy Egret nests. Only three pairs of Snowy Egrets nested there the previous year.

Although Alcatraz has no feral cats, which would be a major threat to the nesting birds, Norway rats were seen recently for the first

time. For ground-nesting birds, these rats pose a danger, but the park staff is developing a plan to control them.

Hatch says that the number of Brandt's Cormorant nests decreased from 220 to about 130 in 1998. The reason for this decline is not clear, though Hatch says that boaters who came too close to their colony during the nest-initiation stage may have been a contributing factor. Yet, overall, humans have played a key role in making the island a more hospitable home for bird colonies. When the fort was built, soil and plants were brought in, primarily from Angel Island. Most of the ornamental plants, shrubs, and trees now growing on Alcatraz were planted during the lengthy time that the island was a military fort and later a federal penitentiary. Carre says that today, the extensive ivy and mirror bush has allowed Black-crowned Night-Herons to occupy the island in a big way. Last year had the third highest total of night-heron nests in nine years.

Park biologists are doing their part to protect these breeding colonies by barricading the north and south ends of Alcatraz for six months of the year, allowing the birds to build up their populations, and the strategy appears to be working. This is heartening considering that up to 4,000 people visit Alcatraz each day.

In addition to the prisoners, more than 300 civilians lived on Alcatraz when it was a penitentiary. From 60 to 80 children of employees lived there in those days. At one point, they had their own bowling alley and soda fountain, and they took the ferry to school in San Francisco each weekday.

Contrast the current upbeat circumstances of the island with the grim period when it housed our most infamous criminals in harsh conditions. Thirty-six men attempted to escape over the years. Most drowned, got shot by guards, or were quickly recaptured. In the entire history of the penitentiary, only three escapees—Frank Morris, John Anglin, and Clarence Anglin—are unaccounted for. Officials believe that the three died in the escape attempt, but who knows? Mobster Al Capone spent the years 1934 to 1939 there, convicted of income tax violations. Machinegun Kelly called Alcatraz home from 1934 to 1951. And Richard Stroud, the famed "Birdman of Alcatraz" himself, was there from 1942 to 1959. Stroud, who kept caged birds while he was an inmate at Leavenworth and wrote a book about bird diseases, actually never kept any birds at Alcatraz. He was transferred to the harsher conditions of Alcatraz for killing a prison guard at Leavenworth.

Judging from its current conditions, it's safe to say that Alcatraz has risen like a phoenix from the ashes of the past and is being reborn as a wildlife sanctuary and park in San Francisco Bay. For more information about the "Birdland of Alcatraz" programs, call (415) 705-1045 or look up the Alcatraz Island web site at <www.nps.gov/alcatraz/nature.html>. To find out about taking a ferry to Alcatraz from Fisherman's Wharf, call (415) 546-2700. ■

Terra Hangen is a freelance writer based in Santa Cruz, California.

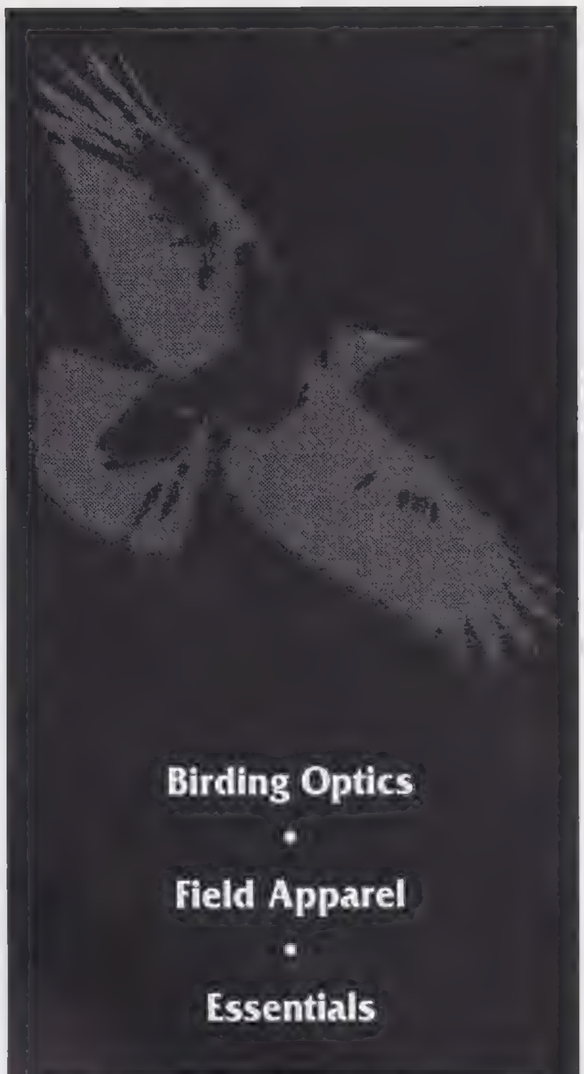
The rich vegetation on Alcatraz has attracted a sizable colony of Black-crowned Night-Herons to the island. Last year, the park had nearly 240 nesting pairs—the third highest total in the past decade.

THE AMERICAN BIRDING ASSOCIATION
PO Box 6599
Colorado Springs, CO 80934
phone: 800/850-2473 or fax: 719/578-1480
E-mail: member@aba.org
Web Site: www.americanbirding.org

Join the American Birding Association — the only North American association for field birders. Get involved with bird education, conservation projects and

- Stay in touch with the latest issues in birding through **Birding** magazine and **Winging It** newsletter.
- Find all of the books, optics, and accessories you need in **The Birder's Catalog.**
- Make contact with local birders as you travel using our **Birder's Resource Guide.**
- Join us at birding **conferences** and **conventions.**

"The best value in birding today!"



Birding Optics
•
Field Apparel
•
Essentials

www.upstart-crow.com
888-597-9794

A lot of great birders have raised glasses in this event

World Series of Birding Organizers and Veterans salute Cornell Lab of Ornithology for their efforts in raising $$$ and awareness for Conservation

17th Annual
WSB
WORLD SERIES OF BIRDING
NEW JERSEY AUDUBON SOCIETY

MAY 13, 2000

To learn how to participate or become a team sponsor, call or write:

World Series of Birding
CAPE MAY BIRD OBSERVATORY
P.O. Box 3
Cape May Point, NJ 08212
Ph: 609.884.2736 • Fx: 609.884.6052
E-mail: sheilalego@njaudubon.org
www.worldseriesofbirding.org

RAISE $$$ FOR THE CONSERVATION CAUSE OF YOUR CHOICE

The Sapsucker Woods Society

RED-NECKED GREBE BY TIM GALLAGHER

You can turn a simple plan for your future into an investment for the birds. A planned gift in the form of a bequest or life income agreement is an ideal way to plan for your future, to retain real benefits for yourself, and to enhance the Lab of Ornithology's efforts in bird research and conservation. Lab friends who take advantage of this special investment opportunity will become charter members of the exclusive Sapsucker Woods Society.

For more details, contact Scott Sutcliffe, associate director, Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Phone: (607) 254-2424; e-mail: <sas10@cornell.edu>.

Cornell Lab of Ornithology
Visit our web site at <http://birds.cornell.edu>

BEACH BIRDS

TEXT AND PHOTOGRAPH BY TIM GALLAGHER

Tips on photographing birds at the seashore

I recently took a trip to where I used to live in Southern California to visit my family and old friends. This brief vacation also gave me a chance to revisit my old bird photography haunts on the beaches and estuaries of the Pacific Coast. And it was great. I'd forgotten how much I enjoyed crawling around the sand there, trying to snap pictures of the many fascinating birds that showed up. Where else but the beach are shorebirds, gulls, terns, scoters, pelicans, and many other birds so plentiful and easy to approach? Whether you live near the Atlantic or Pacific oceans, along the Gulf of Mexico, on an island, or beside a lake or river with a sandy shore, beaches can provide spectacular places for taking close-up pictures of birds.

It's not only the birds themselves that are great at the beach. The subtle hues of the light at various times of day and the backgrounds of sand, rock, and sky add pleasing elements to your pictures. I especially like shooting on clear mornings, when the rich, low-angled light spills warmly across the beach, illuminating all the feather detail and color of the birds and the blue sea behind. But sunsets are great, too. A good sunset fires the sky with orange light that reflects off the wet sheen on the sand when the waves roll back. With backgrounds like that, how can you miss taking beautiful photographs?

Although photographing at the beach has its own set of unique opportunities, it also has distinct problems to overcome. One thing that can be both bad and good is the amount of human traffic you see at many beaches. I don't know how many times I've been just about to snap a great bird picture when a jogger has run up to me to see what I'm doing and scared off the bird. But the large number of people always present at beaches does have a remarkable taming effect on birds. I've noticed that shorebirds flushed by passersby on a beach usually fly back immediately and start foraging again as soon as the people have left.

I rarely use a blind at the beach. Usually you can get close enough to birds there without one, and blinds really catch peoples' attention. Everyone wants to know what you're doing. But if you're just sitting on the sand with a camera and tripod, it's pretty obvious you're taking pictures.

During my earlier California days, I sometimes used to make a variation of a blind out of sand when I went to the beach. I'd use a small trowel and build a wall of sand about a foot or two high and wide enough to hide my body. Then I'd cut a vee in the center of it to accommodate my camera and lens. I always placed a towel over the sand to protect my equipment. I would erect this simple structure fairly close to the tide line and wait for shorebirds to come strolling along the water's edge, foraging in the surf. With this setup, I didn't even need a tripod—the sand conformed to the shape of my equipment and provided solid support. I've taken some nice pictures of Sanderlings, Willets, and other shorebirds using a sand wall. The birds rarely even looked at me. Sometimes they would stand erect for a moment as they heard the soft whir of my motor-drive, but then they almost always continued their foraging. These shorebirds usually forage by walking toward the water's edge as the wave recedes, snatching all the food they can get before the next wave crashes, driving them back. They're so intent on their task, they don't even notice a strange lump of sand looming near them.

I may be lazier than I used to be, but I rarely go to the trouble of building a sand wall these days. I find that at beaches frequented by people, you don't really need it. Just by sitting quietly and patiently on the sand behind your tripod, with its legs at their lowest extension, most shorebirds will come to you. I only build a sand wall now in places where the birds are wary of people. The most important thing in this kind of shorebird photography is to figure out which way the birds are headed so that you can place yourself accordingly. As these birds move in and out with the waves, they usually also move laterally up or down the shore. Figure out which way they're moving and then station yourself ahead of them so they are moving toward you. If you don't look threatening, the birds will eventually move very close to you.

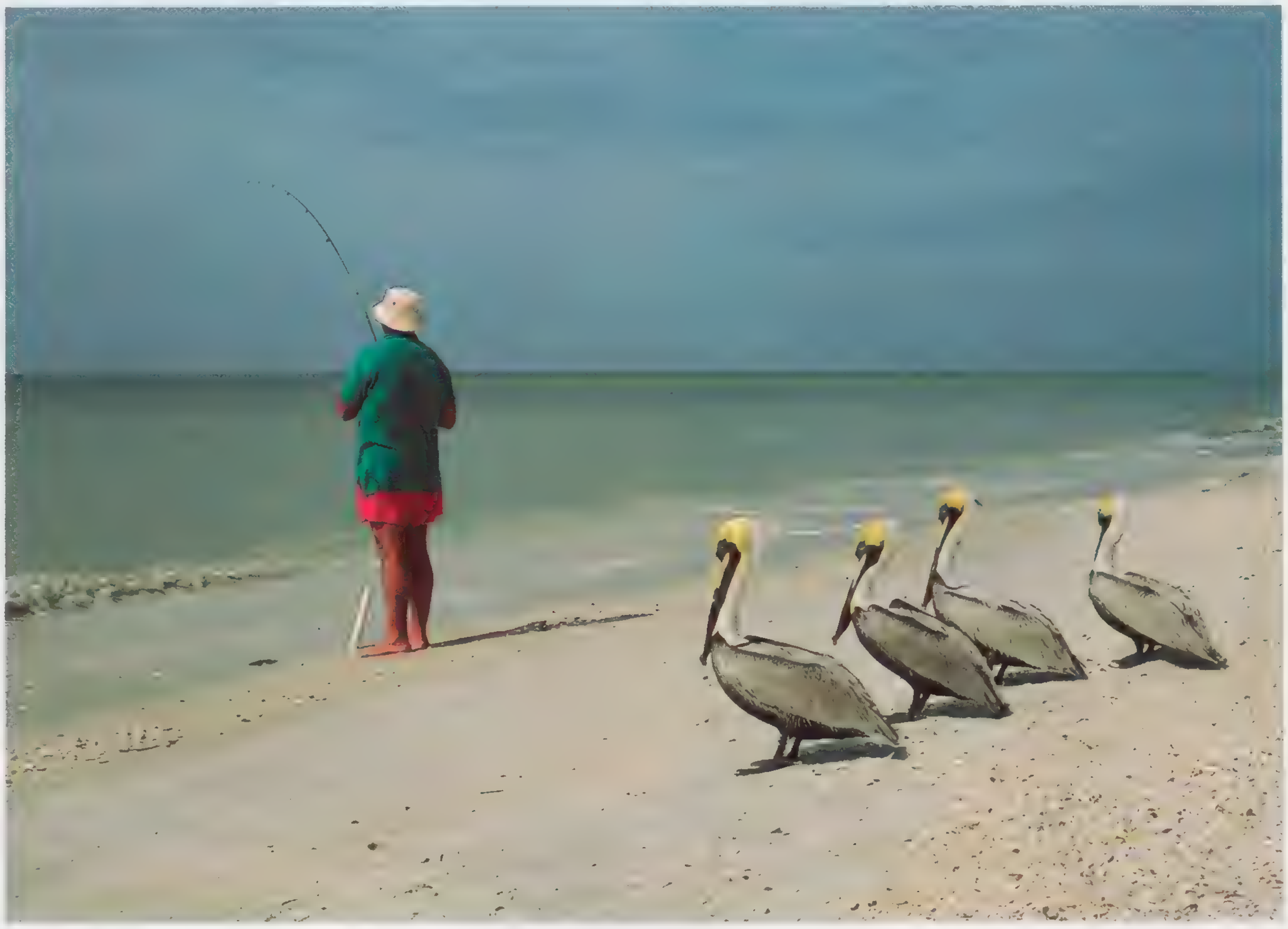
Brown Pelicans are one of my favorite birds at the beach. I've photographed them in California, Florida, and Texas, and I never get tired of them. I used to go to a place on the coast of Orange County, California, where a boat channel cuts through the beach into the ocean. There Brown Pelicans gather to dive for tiny fish in the channel. I would sit down as inconspicuously as possible on the rocks at the side of the channel and watch the antics of the pelicans. In this kind of situation, flight shots are easy—especially with an auto-focus camera. It's just a matter of panning (moving your camera smoothly in a horizontal plane) and taking a picture as the bird flies past. Pelicans are large, lumbering flyers, so it's not hard to keep up with them. What's more of a challenge is to photograph a pelican in the middle of a high, vertical nosedive after fish. Nothing's quite like seeing a bird as large and ungainly as a pelican crash into a school of fish. Often gulls and terns join in the free-for-all, trying to catch fish (or, in the gulls' case, to steal them).

One of the easiest places I've ever photographed Brown Pelicans was on the beaches of South Florida. Many of the birds there seem completely oblivious to humans—as you can see in the picture of the fisherman and the pelicans that accompanies this article. I also took many full body as well as head-and-shoulders shots of pelicans that day, and I've never had it so easy. Sadly, the birds' extreme tameness is probably the result of being fed fish numerous times by people who should know better.

Seagoing waterfowl such as Surf Scoters also make interesting subjects, though they are more difficult to photograph than many beach birds. They tend to stay too far out in the water to get decent close-up shots. I try to find them in areas with rocky outcroppings and pools where they sometimes come in close to shore to plunder shellfish. I hide myself as well as I can in the rocks, remain still, and wait for good picture opportunities to materialize.

While photographing along ocean beaches you can sometimes use the tide to your advantage. Study the tide charts and then watch each locale. I've seen places where a large sandspit with shorebirds scattered widely over it becomes a tiny island with shorebirds tightly concentrated at high tide. That can be valuable information. Just set a blind there during low tide, then wait for the birds to be pushed toward you as the tide rises. But always beware of plus-tides. You could easily find yourself knee-deep in water at a place that was high and dry during an earlier high tide. Again, study your tide charts. You can pick up a copy at most bait stores on the coast.

Another thing to be careful about is keeping your camera equipment away from corrosive elements at the beach. Nothing is more potentially damaging to cameras than the seaside environment. If you ever drop your camera into seawater, you might as well leave it there. If you are lying at the edge of the water with all your attention focused on the shorebirds walking toward you, it's easy to miss the wave that's about to crash over you. Just remember, an accident like that could put your camera gear out of commission—forever.



The constant presence of people on beaches has a remarkable taming effect on birds, such as these Brown Pelicans lined up four deep behind a fisherman in Florida.

Salt spray from breaking waves is also hard on camera equipment. If you put your camera away after it's been covered with a light salt spray, you might find the next time you use it that it's a corroded mess. After a day at the beach, I put my camera equipment through an entire cleaning regimen. I clean the camera body and lenses thoroughly with a soft cloth. Then I use a blower brush or some canned air to blow away small bits of grit or sand. Afterwards I clean the lenses with lens tissue and a couple of drops of lens cleaner.

Another threat to camera equipment is sand. I avoid going to the beach when it's windy. When it's stirred up by wind, sand tends to get into the tiniest cracks and crevices of camera equipment. But even on a still day you should be careful, especially when you change film. You definitely don't want to get any sand inside your camera. Even just one or two grains of sand inside your camera can scratch your film. If you lie down on the sand to take pictures of birds, always place a thick towel or tarp under your camera to keep it clean. Also, try to avoid getting sand from your hands or your clothes onto your equipment. Taking a few precautions to guard against sand and saltwater damage will minimize the chance that any harm will come to your camera gear at the beach.

So, if you're looking for a spectacular location for bird photography—with a wide variety of wonderful species and backgrounds to work with—try out your closest beach. You'll find it's good for a lot more than just soaking up sunshine. ■

30 Years

and billions of birds

We're proud to celebrate the anniversary of our A-6 feeder.

DROLL YANKEES®

1-800-352-9164

www.drollyankees.com

BINOCULARS AND SPOTTING SCOPES

EAGLE OPTICS *RANGERS* - BINOCULARS FOR BIRDERS

Our Exclusive Phase-Corrected *Ranger* Binoculars are now available!

Waterproof/Fogproof
Rubber Armored
Exceptionally Lightweight
Fully Multi-coated Lenses
Extremely Close Focusing
Long Eye Relief
Lifetime Warranty
Everything you've always wanted in a premium binocular for less!

Authorized U.S. Dealer for:
Leica, Swarovski, Zeiss, Swift, Nikon, Celestron, Bausch & Lomb, Kowa, Questar, Tele Vue, Pentax, Canon, Meade, Steiner, Leupold, Bushnell, Minox, Burris, Fujinon, Eagle Optics, Bogen, Gitzo, Brunton, ITT

Get the best information, advice *and* value from Birders who know: Birds, Birders, Birding and Birding Equipment. We've built a nation-wide reputation on offering birders the best in selection, service and prices on quality optic products. Let our courteous and knowledgeable sales staff gladly assist you in selecting from our complete and extensive inventory.

Call for your FREE Comprehensive Optic Buying Guide & Discount Price List on optics from all major manufacturers

EAGLE OPTICS ☎ *(800) 289-1132*

**2120 W. Greenview Dr. #4
Middleton, WI 53562
608-836-7172
fax: (608) 836-4416
earnest1@eagleoptics.com**

www.eagleoptics.com

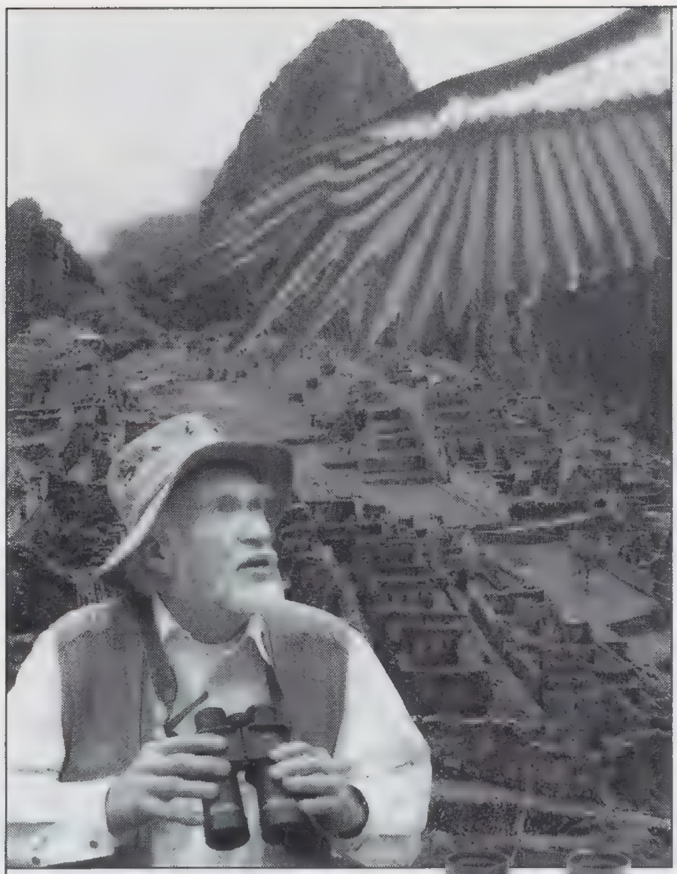
CORNELL LAB of ORNITHOLOGY

Looking for a great bird slide?

SHORT-BILLED DOWITCHER BY TIM GALLAGHER

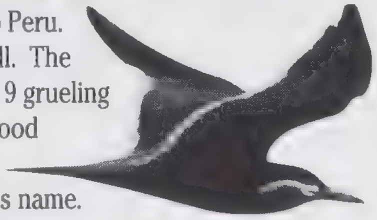
The Cornell Lab of Ornithology has a vast collection of excellent bird slides, available individually or in specially priced sets. Use our slides to fill gaps in your own slide shows or purchase complete sets, some of which include written scripts or taped narrations and bird sounds. Photographs are also available for commercial use. Write today for our free catalog or visit our web site at <http://birds.cornell.edu>.

CORNELL LAB OF ORNITHOLOGY
159 Sapsucker Woods Road, Ithaca, New York 14850
Phone: (607) 254–BIRD e-mail: <birdslides@cornell.edu>

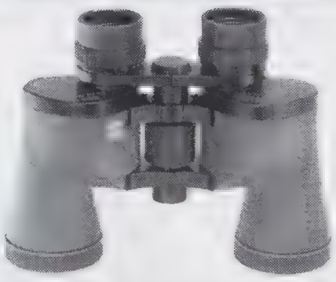


"Big Bird"

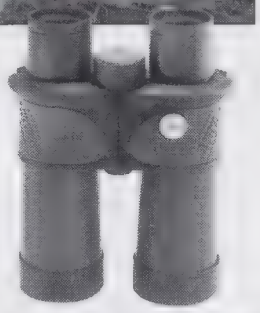
At 12,000 feet Warren Harrington and his Swift Audubon® binoculars really got the bird!



Actually 519 new life birds during the 17 day excursion to Peru. It was a trip that started at the top and went slowly down hill. The decent from Machu Picchu into the Amazon rain forest took 9 grueling hours culminating in a wild, wet ride in a dugout canoe. A good reason for selecting the lightweight, showerproof Swift 827 Audubon® binoculars. This time the rain forest lived up to its name. The raging river had risen up to the tops of its banks. (As the locals observed it evened the odds for the crocodiles). But the Swift's Audubons cut through the overcast and the sharp, bright image gave Warren the opportunity of adding to his life bird record (now 3,221) as well as a rare photo-op of the Inca tern in flight. So through dust, heat, torrential rain, floods and salt spray Warren's Swift Audubon binoculars came through with flying colors. Which is more than could be said for his hat which needed a little brushing. As an old birder once said: *"Sometimes you get the bird. Sometimes the bird gets you".*



SWIFT 804ED AUDUBON®
8.5x,44 Wide Field



SWIFT 827 AUDUBON®
8.5x,44 Showerproof

SWIFT INSTRUMENTS, INC.
952 Dorchester Avenue
Boston, MA 02125
e mail: swift1@tiac.net
Ph: 617-436-2960 • Fax: 617-436-3232
In Canada: Vision Canada LTD, Pickering, Ontario L1W 3S1
WEB: swift-optics.com

SWIFT®

SWIFT INSTRUMENTS, INC. *is a proud sponsor of* BIRDS at home STOKES

Discover the entire Swift line of quality optics at better specialty stores.

Breteche Creek Ranch

Birds of Northwest Wyoming
July 17-23, 2000

Join us for a spectacular week of birding in the Rockies with Chuck Preston. This workshop also includes three days of birding with John Fitzpatrick, director of the Cornell Lab of Ornithology. Our unique educational guest ranch lies in the greater Yellowstone ecosystem, home to a wide array of fascinating birds, such as Clark's Grebe, Sage Grouse, Golden Eagle, Prairie Falcon, Northern Goshawk, Northern Pygmy-Owl, Cordilleran Flycatcher, Sage Thrasher, Lark Bunting, Black Rosy-Finch, and more. There's no better way to experience Rocky Mountain birds. Call or write for more information.

Box 596B • Cody, Wyoming 82414
Phone: (307) 587-3844 Fax: (307) 527-7032

NORTHERN PYGMY-OWL BY DONALD JONES

Tel Vue-85 600mm f/7.0 Spotting Scope

Al Nagler, president of Tele Vue, came to the Lab last fall to show us his latest product, the Tele Vue-85 spotting scope. We drove with him to nearby Stewart Park at the southern tip of Cayuga Lake to try out the scope and got some excellent close-up views of waterfowl and gulls. We also looked at fixed objects such as signs and buildings and compared the view with that of our own spotting scopes. We even used the camera adapter and snapped some pictures of Ring-billed Gulls, using the scope as a telephoto lens. It was an interesting exercise, and the scope was definitely impressive. After showing us how all the optional eyepieces and special equipment worked, Nagler left the scope with us for more than a month, so we could really put it to the test.

In most respects, the Tele Vue-85 definitely came up a winner. One of the things that impressed us most was the scope's whopping field of view at high power. In fact, at 60x (using a fixed magnification eyepiece, not the zoom) the Tele Vue-85 has a field of view as wide as that of most other scopes when they're used at low power. And the 25x-75x zoom provided a bright, crisp image all the way up to full magnification.

TIM GALLAGHER (2)

Scope manufacturer Al Nagler puts his Tele Vue-85 through its paces for Kevin McGowan. Although it's not as easy as using a photographic lens, you can take pictures with a spotting scope—above right, a Ring-billed Gull shot with a Nikon F4s attached to a Tele Vue-85.

The scope really proved its value last fall at the Montezuma Muckrace—an annual birding competition and conservation fundraiser held each year at Montezuma National Wildlife Refuge—where it was used to scan shorebirds on a massive mudflat. The clarity and brightness of the scope made it possible to make accurate bird identifications at staggering distances. By changing eyepieces, this scope can cover a range of magnifications from 11x to 200x—and using fixed magnification eyepieces, the scope was dead sharp at all powers, surpassing the image quality of any other scope. The image quality using a zoom eyepiece was a slight step down, but still impressive. A good magnification for scanning broad areas was 38x, but we often used 67x and even 100x for general birding—far beyond the usable (or even possible) magnification range of many other scopes.

Like the Questar and most other scopes that came to the birding field via astronomy, the Tele Vue-85 reverses the image—that is, when you pan to the left with the scope, the image you see moves to the right. If this is bothersome, you can add an optional prism that flips the image back around the way it's supposed to be. Another interesting optional feature is the Bino Vue attachment, which allows you to view objects with both of your eyes, thus eliminating one source of eyestrain and discomfort caused by scope use. Both of these attachments cut down slightly on brightness and clarity, but the view with this scope is so superior, this effect is negligible. The scope's rack-and-pinion focusing system is quick, accurate, and smooth, and its adjustable balance mounting system, when you get used to it, makes using the scope less awkward.

And if there is a rub to this otherwise glowing report, it certainly is the awkwardness of this scope. It does, after all, come from an astronomy scope manufacturer and when you're out stargazing, you generally set your equipment up and sit in one spot for the night. This is not a scope for fortuitous birding. Forget about screeching your car to a halt and catching a glimpse of a bird with this scope before it sails over the horizon. But for any kind of stationary uses—scanning mudflats for peeps; gazing over the ocean for seabirds; watching a falcon nest from a half-mile away—this scope is absolutely unsurpassed.

The suggested retail price of the Tele Vue-85 (not including eyepieces and special equipment) is $2,650. For more information, contact Tele Vue at 100 Route 59, Suffern, New York 10901; telephone: (914) 357-9522; web site: <www.televue.com>.

— *Tim Gallagher & Kevin McGowan*

The Catbird Seat

TRUTH AND CONSEQUENCES

by Pete Dunne

The public address system screeched as the man at the podium adjusted the microphone and said: "Ladies and gentlemen and members of Bird Lister's Ignonymous. My name is Neelie Gotumall, and I'm a lister."

"Hi, Neelie," the crowd intoned.

"I see lots of old and new faces this evening. Before getting on to club business, I'm going to open up the mike. Anyone care to bare their souls in return for a little support.

"How about you, sir?" he said, addressing a man in the first row who stood, sighed, and mounted the podium.

"My name is Seymore Thanu. And I'm a lister."

"Hi, Seymore," the crowd encouraged.

"I'm not out of control . . . at least I didn't think I was. But last Saturday, I missed my daughter's wedding because I went to chase the Spoon-billed Sandpiper. It just about broke her heart, and it probably cost me my marriage. And I . . . I didn't even get th-the b-b-bird," he sputtered.

"Ohhh," the crowd groaned.

"The bird's still showing," a club member promised. "Try again."

"Only fifty percent of marriages succeed these days," another member advised. "Promise you'll make your daughter's next one."

"Tell your wife you were trying to save money by seeing the bird here instead of flying all the way to Hong Kong."

The man nodded gratefully. "Thank you all so very much," he said. "That's great advice." He left the podium and a woman took his place.

"My name is Lotta Ticks," she said. "And I'm a lister."

"Hi, Lotta," the crowd chanted.

"I was all right as long as I stayed in North America," she said to the floor. "But then I started world listing and . . . well . . . pretty soon I was booking back-to-back tours to places even Rand McNally never heard of."

"We're not rich," she continued. "I ran through all of our savings," she whispered. "I cashed in the IRAs. I borrowed money from anyone who said yes, mortgaged the house, embezzled money from my parent's estate. And now I'm booked on a tour to Papua New Guinea, and I can't pay the balance. And there are still over 30 endemics I need there."

"Ohhhh," the crowd groaned.

"Write a check," a member suggested. "You'll be on the tour before it bounces. Then apply for a bunch of airline credit cards. Pay your debts off on one card and shuffle the monthly balance between cards. You'll buy time and get free air miles for trips."

"Wow," the woman said. "Those are great ideas. You people are terrific."

Another man took the podium. He was smiling. "Hi, my name is Morris Better, and I'm a lister."

"Hi, Morris," they sang.

"I'm not in dire financial straits, but I *do* have this problem, and I want to set the record straight. You see, when the Whiskered Tern showed up, I went to the spot and all the birds flushed. I put my binoculars on the flock but . . . well . . . I didn't actually see the bird."

His smile was now the only one in a room that had grown ominously quiet.

"You counted it?" someone asked.

"Yes," the man said.

"On your life list?" another club member demanded.

"Uh, yes. See I've thought about this, and I'm here to . . ."

"You counted that bird on your life list?" a female club member shouted, standing. "And at last year's Christmas Party, you had the gall to tell me your life list was bigger than mine!"

"Yeah, I'm sorry. That's why I'm . . ."

"You jerk!" she screamed. "You lying, hypocritical, unprincipled jerk!"

Other people were now on their feet shouting (and jerk was the kindest castigation being flung at the podium). The club's moderator tried to restore order but failed. The man at the podium made a break for the rear entrance, but the idea of escaping came to him a second too late.

The police report in the local paper said only that a club meeting at the local VFW hall had ended in a scuffle, and that one man had been taken to the emergency room to remove the pages of bird names that had been affixed to his body with a hot, tarry substance. No charges had been filed, and names were being withheld pending the results of an investigation.

The next club meeting would be held one week hence, as scheduled. ■

ILLUSTRATION BY JEFF SIPPLE

The Brandon Master Birder Spotting Scope

- Three-dimensional effect
- Superior eight-foot close-up focus distance
- Full 65° wide angle field of view
- Extra long (1 1/4") eye relief for maximum viewing comfort, even for eyeglass wearers
- Adjustable magnification from 15x to 45x
- 80mm professional triplet lens design
- Camera adaptable in seconds for full frame photographs
- Black rubber, moisture-resistant armor coating
- Free deluxe Samsonite® carrying case with room for accessories

"Your Master Birder is fabulously machined and the optics are exceptional. I'll spread the word about this scope. You have a first class instrument."
- L.D., Los Angeles, CA

VERNONSCOPE & CO.

Division of Gould Precision Optics, Inc.
Toll Free in U.S.: (888) 303-3526
Phone: (607) 722-5697 • Fax: (607) 722-7939
151 Court Street, Binghamton, New York 13901
www.vernonscope.com

"Beyond my wildest expectations! You've got a real winner here"
- R.D., Union Springs, NY

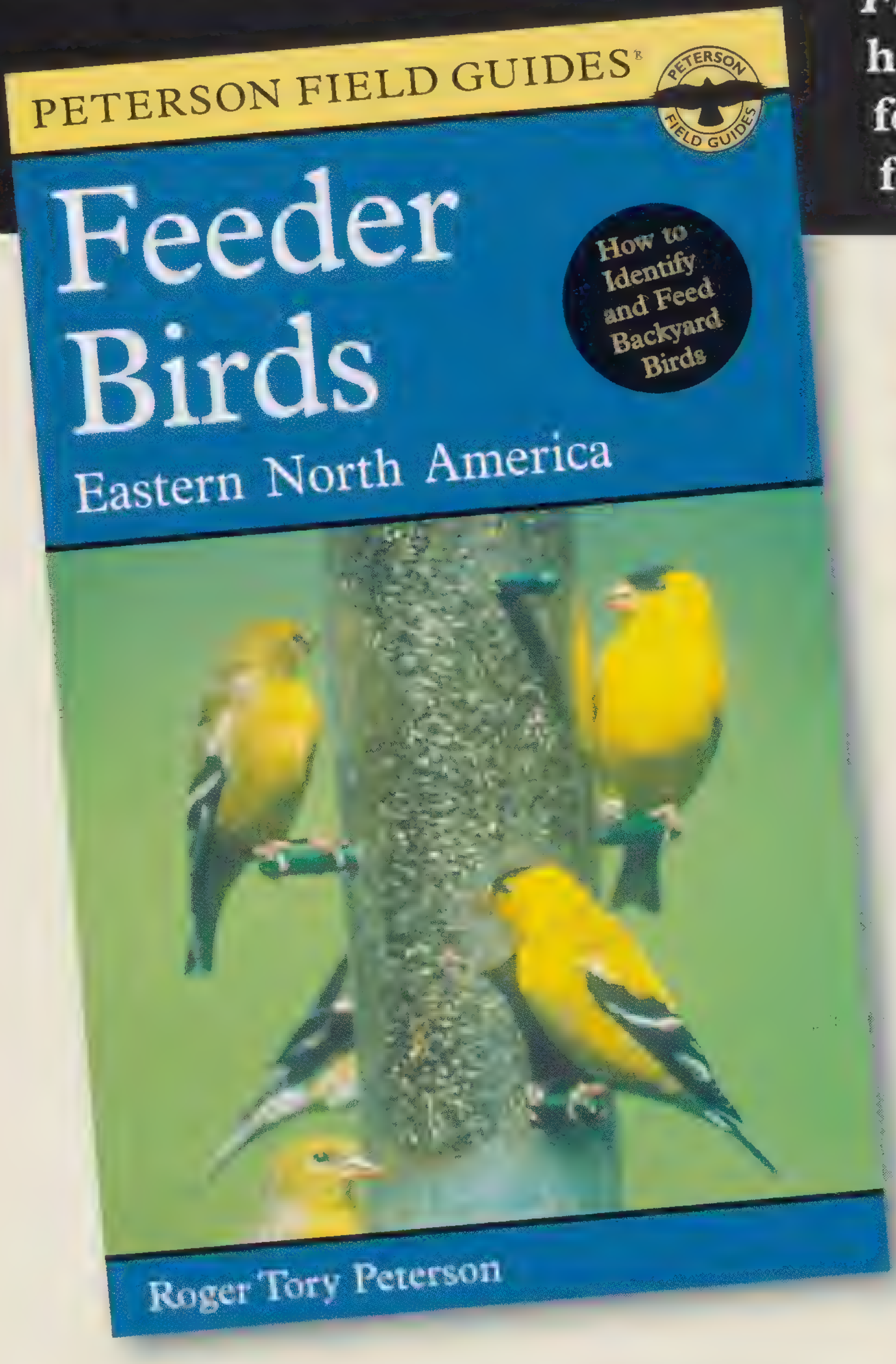
LIVING BIRD

For the Study and Conservation of Birds

SUMMER 2000

Who's perched on your feeder?

Based on the classic *Field Guide to Eastern Birds*, the *Peterson Field Guide to Feeder Birds* has been customized especially for backyard birders and feeder-bird enthusiasts.



Featuring Roger Tory Peterson's classic art in a larger format, the *Peterson Field Guide to Feeder Birds* is designed for the more than 60 million North Americans who enjoy feeding and watching birds.

Backyard birding has become a popular hot topic. Add the *Peterson Field Guide to Feeder Birds* to your collection of field guides and enjoy a world of birds right in your own backyard!

- ▶ The *Peterson Field Guide to Feeder Birds* includes only birds that frequent feeders.
- ▶ The most commonly seen birds are placed first, followed by the harder-to-identify birds that rarely visit feeders.
- ▶ The brand-new introduction by Noble Proctor is a comprehensive manual of bird-feeding topics.
- ▶ A handy quick-reference list tells the kinds of food that attract each species, and a feeder checklist allows you to check off birds as they are seen.

At bookstores everywhere

http://www.hmco.com/trade

HOUGHTON MIFFLIN COMPANY

A Publication of the
Cornell Laboratory of Ornithology

LIVING BIRD

SUMMER 2000 VOLUME 19 NUMBER 3

GREETINGS FROM SAPSUCKER WOODS

It's amazing how much computers and the explosion of interest in the Internet are revolutionizing the field of birding. I signed up for a small Cayuga Lake Basin birding listserv a few years ago. It has since grown astronomically, and now I'm bombarded daily with e-mail messages, each one describing in intricate detail the birds people are finding nearby. It's almost like we have a gigantic, invisible electronic seine hanging from the sky to the ground around Cayuga Lake, and every interesting bird passing through it lights up computer screens throughout the area.

In many ways, this is exactly what the Lab's BirdSource team is beginning to achieve on a national and even international level, gathering information on bird sightings from thousands of online birders across North America, comparing it with data from radar installations and bird-call monitoring stations, and making these massive data sets immediately available to anyone who has access to the Internet. You can extract information, create maps and graphs, and do your own analyses right on your home computer. It's fascinating, but more important, as part of the vast network of online citizen scientists, your input plays an immediate and vital role in monitoring bird populations and developing conservation strategies.

If you haven't visited the BirdSource web site, you should try it out soon—either on your home computer or at one of the many public libraries with Internet access. Just go to <http://birdsource.org> and do some exploring on the site. You'll see what 21st-century birding is all about. And while you're at it, be sure to stop by the Lab's web site at <http://birds.cornell.edu>. I hope we see you soon.

Tim Gallagher
Editor-in-Chief

Cover: A Golden-fronted Woodpecker perches on a fence post in South Texas. This strikingly marked bird, one of North America's most beautiful woodpeckers, is a common resident of dry woodlands and mesquite brushlands in Texas and eastern Mexico. Photograph by Cliff Beittel.

Right: An adult male Eastern Bluebird sits beside some colorful serviceberry plants in a backyard garden. Photograph by Connie Toops.

Back Cover: The Sora, a mid-sized rail, is a common dweller in freshwater and brackish marshes across much of North America. Photographer Richard Day (Daybreak Imagery) took this intimate portrait near his home in Illinois.

10 EXPLORING RED ROCK LAKES
Text and photographs by Gary Kramer
Birding in Montana's remote and spectacular Centennial Valley.

18 BIRD CONSERVATION BEGINS AT HOME
by Thomas Gardali and Diana L. Humple
Creating vital natural habitat for birds and other wildlife in your own backyard.

24 BUILDING ON THE PAST *by Clare Ulrich*
The Lab of Ornithology soars into the new century with a bold new mission statement, a burgeoning array of citizen-science programs, and plans for an expansive new facility.

32 IS RAPTOR REHABILITATION A WASTE OF TIME?
by Scott Driscoll
Some say that the time, effort, and money spent on returning injured hawks, owls, and eagles to the wild would be better spent on saving wildlife habitat.

Departments

4 LETTERS

5 BIRDNEWS

41 CRITICS' CORNER

Columns

6 IN THE FIELD *by Jack Connor*
The outermost nest.

8 FLYING FIELD *by Mel White*
Remembrance of bird songs past.

46 THE CATBIRD SEAT *by Pete Dunne*
The one-stop bird shop.

LIVING BIRD

SUMMER 2000 VOLUME 19 NUMBER 3

Editorial Staff

Editor-in-Chief: Tim Gallagher
Design Director: Kat Dalton
Associate Editor: Leslie Intemann
Technical Editors: Kevin J. McGowan
Kenneth V. Rosenberg
Publications Assistant: Patty Porupski
Contributing Editors: Jack Connor
Pete Dunne
Mel White
David S. Wilcove
Advertising Manager: Barbara Guttridge

Administrative Staff

Louis Agassiz Fuertes Director
John W. Fitzpatrick

Associate Director
Scott Sutcliffe

Director, Education/Citizen Science
Richard E. Bonney, Jr.

Director, Library of Natural Sounds
Jack W. Bradbury

Director, Bioacoustics Research Program
Christopher W. Clark

Director, Bird Population Studies
André A. Dhondt

Director, Conservation Science
John W. Fitzpatrick

Director, Publications
Tim Gallagher

Director, BirdSource
Steve Kelling

Curator, Systematics & Collections
Kevin J. McGowan

Director, Operations
Carol Pyhtila

Director, Communications & Marketing
Allison Childs Wells

Administrative Board

Edwin H. Morgens, Chair
Ellen G. Adelson
Kraig Adler (ex officio)
E. Edward Bruce
Peter J. Bruns
Thomas E. Donnelley II
Theodore L. Eliot, Jr.
H. Laurence Fuller
Mary P. Hines
Ronald R. Hoy
Samuel C. Johnson
Mary Johnston
Austin H. Kiplinger
Randolph S. Little
Linda R. Macaulay
David E. McGiffert
Francis P. Pandolfi
Wendy J. Paulson
Olin Sewall Pettingill, Jr.
Elizabeth T. Rawlings
Frank H. T. Rhodes
Edward W. Rose III
Carol U. Sisler
Stanley A. Temple
Charles E. Treman, Jr.
Joseph H. Williams
David W. Winkler

Living Bird, ISSN 1059-521-X, is published in January, April, July, and October by the Cornell Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Telephone: (607) 254-BIRD. *Living Bird* is free to members of the Laboratory, a nonprofit, membership organization. Our mission: "To interpret and conserve the earth's biological diversity through research, education, and citizen science focused on birds." For more information please write to our Membership Department. Membership is $35 a year. The Laboratory assumes no responsibility for unsolicited photographs or manuscripts. Copyright 2000 Cornell Laboratory of Ornithology.

Visit our web site at <http://birds.cornell.edu>.
Printing by Brodock Press, Utica, New York.
Printed on recycled paper.

Letters

MARK J. BILAK

BLURRY VISION

I just had to tell you, the picture of a Rufous Hummingbird on your Spring 2000 cover is not only the best hummingbird shot I've ever seen, it's also the best bird magazine cover. I also liked the photographs you had in the hummingbird article. I get so tired of the standard hummingbird pictures you see everywhere—the bird frozen in flight by a battery of electronic flashes. They're not like anything you'd ever see in nature. Thank you for daring to show hummingbirds with blurred wings.

R. Bartlett
San Diego, California

HAPPY MEMORIES

SAM FRIED

I read with great pleasure Marcia Clouser's article, "High Plains Drifters" (Spring 2000). It brought many happy memories of my observations of longspurs years ago. My husband and I found McCown's Longspurs on their breeding grounds south of Three Forks, Montana, in July 1970. While in Alaska in 1969 and 1970, we found Lapland Longspurs on the Arctic tundra. In 1962 and 1963, we observed flocks of Chestnut-collared Longspurs on their wintering grounds east of Senoita, Arizona. George M. Sutton escorted me to the "aristida" grasslands east of Norman, Oklahoma, in 1976 to study Smith's Longspurs, which winter there.

I'm sure you have never heard of me, but I have published more than 300 articles about birds in newspapers and magazines. At the age of 95, I still do fieldwork at Guajome Regional Park, east of Oceanside, California. I no longer travel to add species to my lifelist, which totals 723 species in the American Birding Association area and many others in Mexico (where I lived for several years), Hawaii, and South America. I consider birding a consuming hobby and a happy way of life. Keep up the good work!

Fern R. Tainter
Oceanside, California

THE LAST LAUGH

I was taught by my mentor, Dave Junkin, a fine birder, to observe, observe, observe. What are the birds doing and why? Pete Dunne's article, "A Chat About the Rules" (Winter 2000), gives it all back to the birds. The hi-teckies can play. Their results may be formidable and obviously important, but I like the birds to have the last laugh on us "humble" human beings. Bravo for Dunne's humor!

Taddy Dann
Beaver Meadow Nature Center
North Java, New York

We welcome letters from readers. Write to The Editors, *Living Bird*, 159 Sapsucker Woods Road, Ithaca, New York 14850, or send e-mail to <livingbird@cornell.edu>.

A New Home for the Lab

These are historic times for the Cornell Lab of Ornithology. With a clear mission and almost 100 people working to achieve it, we are interacting more broadly with scientists, students, conservationists, and the public than ever before. Record numbers of members, citizen-science participants, research projects, and partnerships are yielding data on bird populations and conservation questions across the hemisphere. The Library of Natural Sounds is overflowing with new recordings, which we're busy converting into a digital format for efficient storage and rapid transmittal via the web. Our new Home Study Course in Bird Biology has been released. Finally, our Information Technology group has developed a remarkable system for delivering information and citizen-science interactively over the web.

Ten years ago, the Lab was already crowded, but our staff and Administrative Board had a great vision. They said, "Let's keep building a world-class program, because talented and motivated people are more important than bricks and mortar. We'll worry about building a new facility only when we *know* we're ready for it." So, we steadily increased our endowment and now have six faculty leaders. We crammed to make room for staff scientists and now have more than 30. We added trailers to provide space for citizen science, and we now help shape this burgeoning discipline across the continent. We forged relationships with campus faculty in six Cornell departments and now lead cross-disciplinary programs in bioacoustics, animal behavior, conservation science, disease research, systematics, and science education. We sought expertise from Cornell colleagues as the Internet exploded onto the scene, and we now have one of the leading web-programming teams at a university already known for its computer science.

Throughout the 1990s, exemplary vision, effort, achievement, and fiscal responsibility took place inside a badly outdated building and a few trailers at Sapsucker Woods. We were rewarded with steadily increasing support from Lab members, granting agencies, private foundations, and patrons. Between 1990 and 2000, the Lab's membership grew from 13,000 to 26,000, its budget from $2 million to $6.5 million, and its staff from 40 to 96.

Growth, however, is not an end in itself. It was valuable only because it led to more accomplishments in the pursuit of a vital mission. During the 1990s, our technical publication rate grew from a few articles per year to more than 20, and the journals accepting our work today are among the most influential in the world. Our citizen-science projects have proliferated, from the fledgling Project FeederWatch in 1990 to more than a dozen ambitious ventures today. The Lab's involvement in conservation grew from a few monitoring efforts to a host of projects that span the globe. In every way we can measure their impact, our accomplishments are far greater and more lasting now than they were only a decade ago.

Now, finally, we're "ready to molt." Our programs can no longer excel if they must remain inside our cramped old shell. We need space for students and visitors to sit down and work. We need a real library. We need lab and computer facilities for geographic analyses of bird population data. We need new sound and video studios equipped to handle digital media. We need production and engineering facilities to create great CDs, fashion experimental recording devices, and repair equipment. We need modern museum facilities to provide access to priceless scientific specimens. We need DNA sequencing facilities to keep unlocking the mysteries of avian evolution. We need teaching labs and preparation labs, conference rooms and breakout space, public meeting areas and quiet research carrels. We need layout space for award-winning publications and computer facilities for award-winning web sites. We need adequate public space to serve thousands of visitors and to honor some of the world's greatest bird art. We need a listening room so visitors can be transported anywhere via the world's greatest natural sound collection.

I am thrilled to announce that the board and staff of the Cornell Lab of Ornithology have launched the most ambitious capital drive in our history, and we are already well on the way to reaching our $28 million goal. The result will be a spectacular new science center at Sapsucker Woods—a true "global clubhouse" to house the world's leading programs for the study and conservation of birds. I encourage you to read the article on page 24 and share our excitement about all the avenues this new home will open up for all of us.

This new building will belong to you, our members, as much as to its daily occupants. I hope you will consider making a donation to this once-in-a-lifetime opportunity. Every gift, regardless of size, will help fulfill this dream and advance the interpretation and conservation of birds throughout the world. Finally, please do visit us once our dream home is complete. It will take your breath away, even as it serves its purposes—for the birds.

John W. Fitzpatrick

To find out how you can help the Lab's building campaign, contact Scott Sutcliffe, Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850; telephone: (607) 254-2424; e-mail: <sas10@cornell.edu>; or call Jim Mazza at (607) 254-7497; e-mail: <jam16@cornell.edu>.

THE OUTERMOST NEST

by Jack Connor

Searching for sparrows in the saltmarsh

> *"When you have found a bird's nest, you have found him out. You have found the very center of his life, and his dearest secret. In the case of small, ground-nesting birds especially, the difference between secrecy and discovery is the difference between success and failure, life and death, continuance and oblivion. . . . Small wonder that birds hide their nests with every last evolved instinctual whit of cunning that they have."*
>
> *—William Burt*

One summer, inspired by a new pair of knee-high rubber boots and an embarrassing blank on my New Jersey Breeding Bird Atlas card, I promised myself I would find a nest of the Seaside Sparrow. I had been reading *Shadowbirds*, William Burt's delightful account of his pursuit of the nests of the Yellow Rail and the Black Rail, and I transposed his odyssey into an expedition I could take myself—one that would require much less effort and have quicker results, I assumed.

Like the rarities Burt pursued, Seaside Sparrows are more often heard than seen and hide their nests in wet marshes. Unlike them, however, seasides are fairly common birds along much of the Atlantic Coast. The first specimens of the species were collected by Alexander Wilson in 1810 near Ocean City, New Jersey, and although their numbers have declined with loss of habitat, the species can still be heard and seen there and elsewhere in southern New Jersey, including 20 miles north, on the Mullica River estuary near my house.

Their song, *tick-tick-hissssssss*, is associated in my mind with the haziest and buggiest days of June. All other passerines of the local saltmarshes begin courtship and breeding earlier in spring. Red-winged Blackbirds and Boat-tailed Grackles start displaying in late February; Tree Swallows are swirling over their nest boxes by late March; Barn Swallows return by mid-April; Marsh Wrens are singing by late April and weaving their nests by mid-May. Seaside Sparrows come last in the sequence, nest farthest out, and unlike other landbirds, they live in the saltmarsh full-time. The others forage in the tidal areas, but retreat to higher land to nest—the swallows on manmade structures; the blackbirds, grackles, and wrens in the shrubs and bushes well above the tide line. The Seaside Sparrow is the saltiest and outermost of all North American landbirds, living closer to tidal waters than any other passerine.

That habitat is one birders tend to avoid, because of muck, sun, and biting bugs. Rubber boots make it accessible, however. All I had to do was trudge on out, stepping around the deepest holes, slogging through the rest, and as long as the wind blew hard enough to keep the mosquitoes and greenheads away, the summer saltmarsh was a joy to explore. Killifish sparkled in the shallow pools, fiddler crabs scrambled up the banks, terrapins and muskrats paddled by. The tallest vegetation is *Iva frutescens*, marsh elder, which grows only three or four feet high, so that once I had stepped through the roadside *Phragmites* and marched 100 yards out, I felt like a giant assessing his kingdom.

Except my subjects weren't paying proper homage. The sparrows wouldn't let me near them. I trudged out each windy day for two or three weeks, saw a couple of dozen Seaside Sparrows, heard dozens more, and never found a nest. A male would sing in the distance, perched at the top of a reed, and I would stumble toward him. If I kept my binocs on the bird as I walked forward, I tripped and fell to my knees, and the bird disappeared while I cursed. If I took my eyes from my binocs to watch my step, the bird disappeared as soon as my head was down. Those few I did manage to keep in view simply waited until I had closed within 50 yards or so, then dropped from sight into the one tussock of grass that looked most like all the other tussocks in a landscape of grasses. When I reached the spot where I thought he might be hiding, I found only mud—and an occasional crab claw or Styrofoam coffee cup.

I should have known the searching would not come easy. Among other challenges Seaside Sparrows must meet in their tough habitat is the narrow horizontal band between the highest tide and the top of the tallest shrubs. It's a tight squeeze. Misjudge how high the tide can rise below your nest and you will lose your eggs in the flood. Misjudge how much cover you need above your nest and Fish Crows and Herring Gulls will eat your eggs or your chicks. The Seaside Sparrow survives only because it can find the very best spots, high enough to be dry, low and camouflaged enough to remain undiscovered.

I also had to admit I was less skilled at chasing nests than chasing birds. "Nest finding, like letter writing," Burt has noted, "is a forgotten art."

The final face-off came one morning, two hours into a long walk across the marsh, when a Seaside Sparrow flew in from somewhere off to the right and landed in an *Iva* shrub only

20 yards from me. I had tromped after several singing males in the previous hour, and each had escaped with ease. Unlike those birds, however, this one had come straight toward me. A yellow caterpillar hung from his bill like a handlebar mustache. He was feeding his young, obviously, and they had to be close by.

"I've got you," I told him, "at last." Then I squatted and lowered my binoculars, hoping he would understand these gestures as a peace offering, a sign that I was no giant predator, but only a friendly birder who wanted just a glimpse at his nest. "One quick look," I whispered, "and then I'll leave you alone." He didn't get the message. Instead, he executed a distraction display, circling away from me, chipping as he went, carrying the caterpillar back where he'd come from—as if his nest was over thataway somewhere. I knew better and held my spot. A few moments later, he was back on the same branch in the same *Iva*, the caterpillar/moustache still in place.

"I trudged out each windy day for two or three weeks, saw a couple of dozen Seaside Sparrows, heard dozens more, and never found a nest."

TOM VEZO

A couple of minutes ticked by. He'd have to deliver the insect sooner or later, I knew. Eventually, it dawned on me that the nest was probably directly beneath me. I dared not take my eyes from him to turn over the grasses at my feet, however. He'd escape me then somehow, as all his compatriots had escaped.

For several more minutes he stared at me, and I stared back. Clouds moved, gulls and crows crossed overhead. How long could his young wait for their food? Was his mate, their mother, off foraging herself, and maybe carrying back caterpillars by some other, surreptitious route? Or was I blocking her from the nest also?

I looked at my watch. Nearly 30 minutes had passed! Now I was mad at his bull-headed stupidity. Didn't he understand his young needed to be fed—and the sooner, the better? Couldn't he tell I was no fox or raccoon? Couldn't he see the Atlas field card in my shirt pocket?

At last, I compromised. I stepped back five giant steps, then another five. He did not move a muscle. Another eight giant steps backwards. Now he was only identifiable through my bins and was at least as far away from me as several of his compatriots I'd encountered earlier, who had hardly glanced at me while dropping from sight into the lookalike grasses. My friend had become more suspicious of me than they had been, and I promised myself I'd live up to his expectations. Wherever he dropped down into the reeds, I would burn the pattern of grasses on my brain. His nest was right there somewhere!

But he didn't drop down. Perhaps he twitched. In the distance I couldn't be sure. Then, another gull passed overhead, followed by two crows, another gull, and shortly, a trio of crows. Just a week earlier I had seen three Fish Crows work together to devastate a Red-winged Blackbird's nest. The male blackbird had attacked the first crow that landed near the nest and driven it away, pecking at its head. While he chased that first intruder, two other crows landed next to the nest, cracked open the eggs, and swallowed the contents, while the female blackbird fluttered above them, chipping helplessly. Red-winged Blackbirds are among the feistiest and sharpest-billed of the saltmarsh passerines. What kind of defense, I wondered, could a sparrow put up against a crow or gull? If his nest were spotted by a predator, the seaside would have no defense at all. Wariness was his *only* defense. And, therefore, natural selection had been sharpening it for eons.

My few years of birding experience and couple of weeks of saltmarsh nest-hunting compared to the Seaside Sparrow's genetic program as a pencil and a scrap of paper compares to a Cray Supercomputer. I wanted only a game of tic-tac-toe; he was playing Darwinian survival.

Somewhere in this sequence of thoughts, I realized what I had to do. I turned my back and walked away. At the moment I felt defeated and also an odd mix of guilt, anger, and relief. Retreating seemed a sentimental thing to do—and also the right thing. I stepped off at least 100 yards before turning to look. My friend was gone.

His young enjoyed that caterpillar, I assume, and they and their children may be among the seasides I will hear singing this summer. Those boots are old now and leak, but I still walk out in the marsh on windy days. I don't search out Seaside Sparrow nests any longer, though. Some things, I've learned, are better left undiscovered. ■

Flying Field

REMEMBRANCE OF BIRD SONGS PAST

by Mel White

Mining for memories with bird sounds

I think if I were young and of a scientific bent, I'd go into a profession involved in research on the human mind. I know a few psychiatric types, as well as a few crazy people, and it seems to me that after all the investigation that's been done so far, the depth of ignorance of this subject, and so the potential for discovery, remains unlimited. When we do occasionally make a small step in understanding, the result is not only interesting but valuable—unlike, say, the exploration of outer space, an infinitely sterile and boring place. People get excited when they find ice out there. *Ice!* "Hey, NASA, here's a quarter. Run down to the Dairy Queen and buy yourself a cupful."

The enigmatic process by which we remember things especially fascinates me, and I wonder how much progress science has really made with all the mysteries of chemistry and electricity in our heads. Just today, the mail brought a new *National Geographic* with a short piece about memory and the brain in which a scientist said, more or less: We thought we knew something, but we were wrong. Take note, all you biology majors: I can foresee decades more of this kind of breakthrough.

When it comes to the stuff we do know, or think we do, where do we keep it all, and how? How is it that when I look up a phone number that I need only temporarily, I'm able to remember it for an hour or two, and then it conveniently disappears? Where does it go? Or is it still in there? Could I remember *all* the numbers I've ever known if only I could take a machete to the weeds that have grown up along the unused neural paths? What about friends' birthdays, and the PIN for my MasterCard, and the combination to the now-useless lock that sits on a shelf in the basement?

Obviously, a lot of stuff does hang out in our brains, like actors sitting around backstage playing gin rummy, waiting to go on and deliver a few lines—or even to figure prominently in the third act. Proust ate a pastry and remembered a whole childhood. The other day I heard a song from my high-school days—I can't bring myself to say which one; even in the context of the Sixties it was really stupid—and immediately I was in a '62 Chevy, driving down Highway 65 and smelling burgers from Frank Brannan's drive-in. Okay, it's not the Rue Saint-Jacques in Combray, but it's mine.

The same day I heard that song, I'd been out jogging and heard the querulous whine of a Blue-gray Gnatcatcher, and suddenly spring was here. All around me azaleas and dogwoods were blooming, and for weeks red maples, bluets, and forsythias had been telling me the news, but it took this sonic evidence, this figurative Call to the Post, to confirm that the world had completed another revolution and the cycle of renewal was truly beginning. The sound instantaneously brought forth a set of memories and emotions that flowers, temperature, and photoperiod did not. Instead of the gnatcatcher, it could just as well have been a Black-and-white Warbler calling out the news—here, it's nearly always one or the other of these birds. (I discount as a herald of spring the *dee-drick* of the Purple Martin, which too often shows up when we still have another Arctic front and snowstorm yet to go.)

The power of bird song to evoke specific memories is just as strong, I think, as that of pop songs—or pastry. My own Proustian madeleine would be the insistent shouting of the Pileated Woodpecker, which takes me back to Sunday afternoon drives "out in the country" with my parents, trips that were the seeds of the birding journeys that have taken up so much of my life. I remember the first of these big woodpeckers I ever saw, pounding away on a dead tree in the middle of a field. From then on, the idea that we might find another one was a constant theme on our trips. Only Painted Buntings and Scissor-tailed Flycatchers rated as high on our pre-drive, Sunday-lunch want list. (In the years since, the scissor-tail, like the armadillo and the Greater Roadrunner, has expanded its range and wouldn't be a big deal around my hometown anymore.)

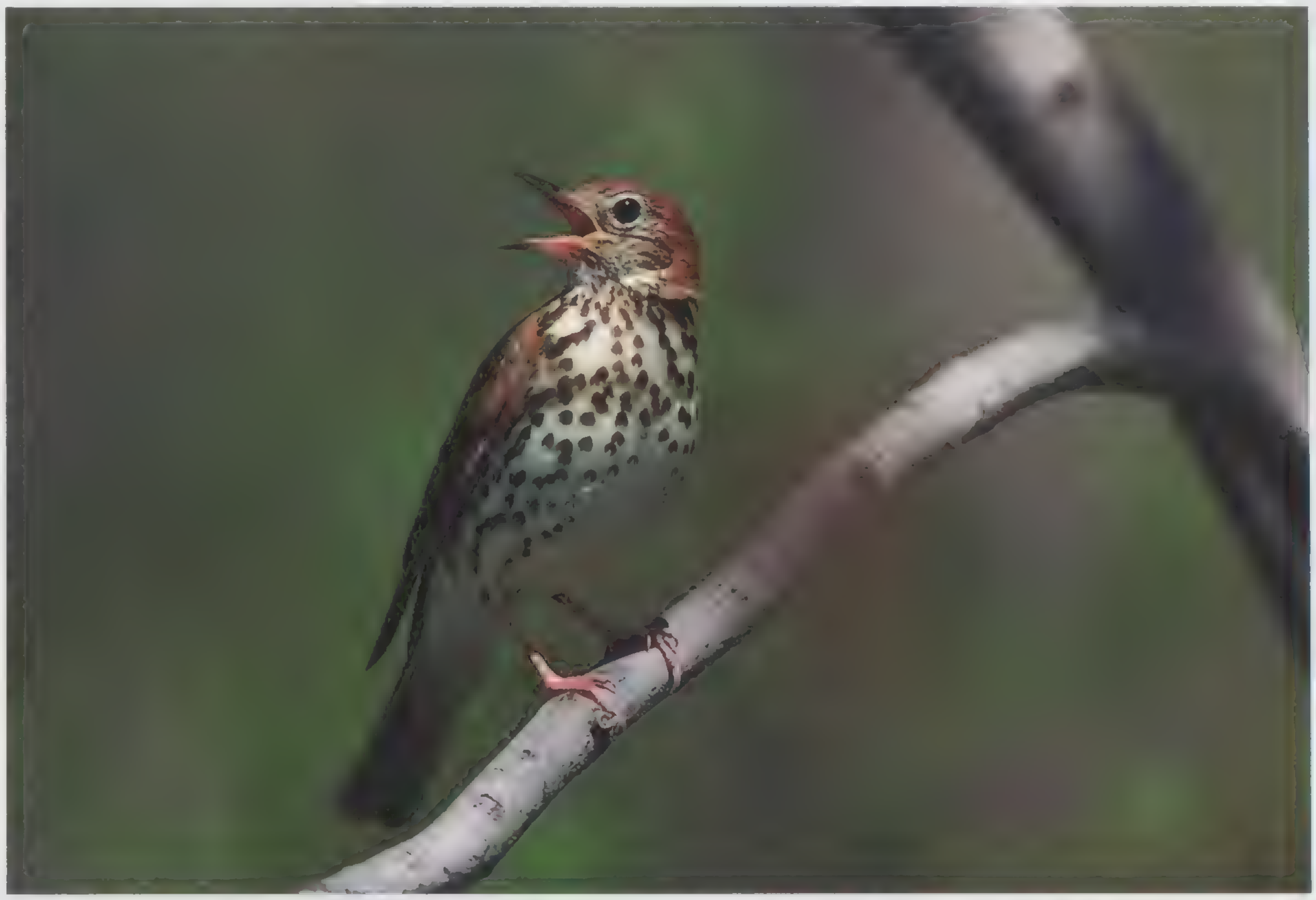
The simple notes of the Ovenbird put me right in the middle of Overton Park, in Memphis, where I saw my first one. I had a girlfriend who lived in West Memphis in those days, and we would drive across the Mississippi on Saturday mornings to wander among huge old oaks and sweetgums that looked like they were a century old, and undoubtedly were. It was only later that I learned we'd been birding in an environmental landmark and not just a city park. When planners decided that putting Interstate 40 right through Overton Park made the most economic sense, conservationists filed suit and stopped the highway right at the park's doorstep, saving the old trees that in spring were full of thrushes, warblers, and tanagers. I like to think that one of those Memphis environmentalists might have been thinking of Ovenbirds when he or she decided to stand up and fight the Interstate. That's a lot of history, personal and political, to be contained in *teacher, teacher, teacher.*

Willets stalk the beaches year-round all along the eastern seaboard, and I suppose people who grew up on the coast take their loud call as much for granted as I do the multifarious songs of the Northern Cardinal—just part of the background noise of being outside. But I can't hear one anywhere, South Carolina to North Dakota to California, without thinking of the upper Texas Gulf Coast. I didn't even see the ocean until I was practically grown up, and I was 25 before I made my first coastal birding trip. The place I hit the beach was that stretch of oil refineries, fish restaurants, vacation houses, and motels around Port Arthur and Galveston, and one of the first birds I saw was a Willet. What a revelation when that plain gray bird opened its wings and called as it flew away! And what an exciting time for me, experiencing a new environment. I saw my first Roseate Spoonbills that same day, but somehow it's the humble Willet that embodies that trip for me. Just let me hear one *pill-will-willet* and I can see the tankers leaving Galveston Bay and smell the petrochemicals in the air.

Many other bird songs and calls take me back to specific times and places: when I hear a Western Meadowlark, I can't help thinking of an Interstate rest stop in Colorado and a trip west to take a friend to her summer term in Boulder; Common Raven—the Santa Catalina Mountains, outside Tucson, and a visit to a college buddy; Canyon Wren—the deep chasm of Santa Elena Canyon, in Big Bend National Park, and a spur-of-the-moment all-night drive. For these and many other birds, it's not the thought of it or the sight of it that evokes those memories—just the sound.

My favorite bird song—and, not coincidentally, my favorite space-time association—isn't connected with any one spot on the earth, though, or any one date on the calendar.

Apparently quite a few people consider the trilling of the Hermit Thrush the most beautiful bird song in North America (or at least north of the Mexican border, which takes Slate-colored Solitaire out of the competition). Maybe if I'd grown up in Vermont or Oregon I'd feel the same way, but my vote goes to the Hermit Thrush's cousin, the Wood Thrush. I can defend this choice on purely aesthetic grounds—the confident yet delicate fluting, the otherworldly, almost unnaturally eerie echoes at the ends of phrases—but the truth is, I love the Wood Thrush's song because of the way it makes me feel.


LANG ELLIOTT

"That's the thought the Wood Thrush's song summons from my memory: I'm in a good place, where there's unlimited potential for discovery."

When I hear it, I know I'm in "good woods." I wish I had a more descriptive or technically accurate name, but that's the simplistic way I've come to characterize my idealized mid-southern landscape, and I almost never hear a Wood Thrush anywhere but there. I know the place when I see it. It could be a bottomland hardwood forest, as long as it isn't too wet; it could be an oak-hickory slope, as long as it isn't too dry. It doesn't have to be old growth, but it has big trees and a high canopy, with pawpaws and hop hornbeam in the understory, and it smells rich and green and vaguely moldering. I see May apples on the ground and trilliums and green dragons. Besides my thrush, I hear an Acadian Flycatcher, a Kentucky Warbler, a Louisiana Waterthrush, a whole bunch of Blue-gray Gnatcatchers, maybe off in the distance a Prothonotary Warbler, and toward dusk on cloudy afternoons a Barred Owl.

It's where I go in spring, hoping to hit one of those warbler days, but even if I don't see much I feel content when I'm there. A ring-necked snake might be stretched out beside a log, trying to warm up on a chilly morning. A young cottontail might freeze beside the path, comically trying to hide when it's just eight feet away. A gemmed satyr might perch to bask in just the right position so the sun glints off its hindwing jewel-spots. That's the thought the Wood Thrush's song summons from my memory: I'm in a good place, where there's unlimited potential for discovery.

If I were given some sort of psychological test, I'm sure my response to the Wood Thrush's fluting would be as involuntary as the way "My Girl" makes us baby-boomers think of the junior prom: less rational than simply Pavlovian. I heard it so many times when I was happy that now I get happy when I hear it. What better criterion could there be for a favorite song? ■

Exploring Red Rock Lakes

TEXT AND PHOTOGRAPHS BY GARY KRAMER

Birding in Montana's remote and spectacular Centennial Valley

From the darkened marsh comes the stirring of swans. As the sun, still below the horizon, paints the sky pink, the commotion grows louder. Soon a single clear trumpet resounds across the dimly lit water. More light, more noise, and the din quickly escalates. Finally, the sound of wings flapping and birds calling fills the still air as a family of Trumpeter Swans—two snow-white adults and their three sooty-gray cygnets—flies into view. My friend and I watch as they settle on the other side of Wigeon Pond, alongside a small group of Canada Geese, a few Mallards, and some other trumpeters. The swans greet each other with a flurry of honks, hisses, gurgles, and trumpeting as they nod and dip their heads. Looking ghostly in the early morning mist, the swans are a sight I will not soon forget.

A pair of Trumpeter Swans, at left, looks ghostly in the early morning mist at Wigeon Pond. Red Rock Lakes National Wildlife Refuge was established in 1935 specifically to protect a remnant population of these majestic birds.

The year-round presence of these majestic Trumpeter Swans is just one of the reasons birders make the trek to Red Rock Lakes National Wildlife Refuge (NWR) in southwestern Montana. This 40,300-acre refuge protects an oasis of marshes, sagebrush flats, aspen groves, and conifer forests that supports a remarkable abundance of wildlife. Located in the Centennial Valley—a breathtakingly scenic and isolated area about 50 miles west of Yellowstone National Park—the refuge has a vast array of habitats, ranging from native grass prairies at 6,600 feet to the harsh alpine zone at 10,000 feet in the Centennial Mountains. This rugged and majestic range borders the refuge on the south and east, catching the heavy snows of winter, which provide a constant supply of water to the 14,000 acres of lakes and marshes in the refuge. This diverse marsh-prairie-montane environment gives Red Rock Lakes its unique character.

Thanks to this habitat diversity, a wide range of bird species (232 in all) has been recorded at Red Rock Lakes. A small percentage of these—including Common Raven, Black-billed Magpie, Blue Grouse, Common Goldeneye, Mallard, Great Horned Owl, and Mountain Chickadee—are year-round residents, but most birds migrate out of the area to avoid the long, harsh winters. Spring migration can sometimes be a productive time for birding at Red Rock Lakes, but many migrants pass over the area without stopping due to the deep snows and cold temperatures that often persist into May. Summer is a time of abundance and rejuvenation, when many birds nest and raise their young. But autumn is when the refuge hits the peak of its bird species diversity, with many summer residents still present and fall migrants moving through the area.

Red Rock Lakes National Wildlife Refuge was established in 1935 to protect a remnant population of Trumpeter Swans. These spectacular birds are among the largest waterfowl in the world, weighing up to 30 pounds and with a wingspan of eight feet. They were hunted nearly to extinction in the early 1900s, for their skin, feathers, meat, and eggs. Fortunately, the Migratory Bird Treaty Act in 1918 gave protection to Trumpeter Swans and other migratory birds and helped curb illegal killing.

In 1932, fewer than 70 Trumpeter Swans were known to exist in the entire world, and southwestern Montana and northwestern Wyoming were thought to be their last stronghold. At that time, the area that would become Red Rock Lakes NWR held nearly half of the known population of this species. (In the early 1950s, however, researchers discovered a fairly large, previously unknown population of Trumpeter Swans in Alaska.) The refuge area has a system of hot springs, providing year-round open water, where trumpeters, as well as other wildlife, can find food and cover even in the coldest weather.

According to recent estimates, about 16,000 Trumpeter Swans now reside in North America—13,000 in Alaska, which winter on the Pacific Coast; more than 1,600 in Canada; about 500 in the Midwest; and more than 500 in the tri-state area of Idaho, Wyoming, and Montana (including Red Rock Lakes). But Red Rock Lakes is more than just Trumpeter Swans—it is a unique birding area, hosting a variety of interesting species.

Thanks to its habitat diversity, a wide range of bird species, 232 in all, has been recorded at Red Rock Lakes.

Red Rock Lakes National Wildlife Refuge hosts a spectacular array of waterfowl. In addition to Trumpeter Swans, visitors routinely see Gadwall (at left), Cinnamon Teal (at right), Green-winged Teal, Common Goldeneye, Barrow's Goldeneye, and many more.

Dan McKenna and I begin our trip through Red Rock Lakes NWR near Wigeon Pond in the western portion. It is an early morning in June and mist hangs above the water, lightly shrouding the pond. From the gravel road, we see Trumpeter Swans and numerous other waterfowl, including Mallards, Green-winged Teal, Cinnamon Teal, and Canada Geese. A closer look at the margins of the pond reveals a Virginia Rail, several Willets, and a

> *Raptors are everywhere. By the time we reach the refuge headquarters, 12 miles away, we've seen eight raptor species.*

The high-elevation grasslands and sagebrush areas in the Centennial Valley provide habitat for numerous open-country raptors. A Prairie Falcon, at left, plucks a Northern Flicker that it caught in a high-speed dive, which the author witnessed. At right, a Red-tailed Hawk launches itself into the air.

Great Blue Heron wading diligently in the shallows, searching for fish.

As we move south, approaching the intersection of Elk Lake Road and Red Rock Pass Road, we check the fence posts for male Common Snipes surveying their territories. Just before we reach the intersection, Dan sees one fly from a fence post, going almost straight up in an erratic, swooping display flight known as "winnowing." We watch the bird's acrobatics for several minutes until it flies from our sight.

The first bird of prey we see is a Swainson's Hawk, perched on a fence post beside the road. These impressive open-country birds nest throughout the west in habitat varying from annual grasslands at sea level to high-elevation sagebrush and grass prairies like those at Red Rock Lakes. Each autumn, they migrate thousands of miles to winter in South America, many of them ending up on the vast pampas of Uruguay and Argentina. Both light- and dark-phase Swainson's Hawks occur throughout their range. The bird we see is a light-phase adult, with its characteristic dark bib and whitish underparts. As we drive toward the roosting bird, it flies less than 50 yards and lands on a low snag, where we watch it for several minutes before moving on.

Just south of Red Rock Creek lies the intersection of Elk Lake and Red Rock Pass roads. From the intersection, the eastern boundary of the refuge is just over a mile away, and the resort town of West Yellowstone is 33 miles to the east. We decide to head south and then west on Red Rock Pass Road toward the refuge headquarters. Driving slowly along the gravel road we pass over grass-lined creeks, along vast expanses of prairie and sagebrush, aspen patches, and willow thickets.

Raptors are everywhere. By the time we reach the refuge headquarters, 12 miles away, we've seen eight raptor species. Red-tailed Hawks, Northern Harriers, Swainson's Hawks, and American Kestrels are numerous, but the most spectacular sight is a Prairie Falcon making a high-speed dive at an unsuspecting Northern Flicker. After an explosive impact, the falcon carries the flicker to a fence post, less than 100 yards from the road, and starts methodically plucking feathers from its prize. Nearby a Golden Eagle soars on the rising thermals, searching for a ground squirrel or a white-tailed jackrabbit for its morning meal. We watch a pair of Bald Eagles flying over Upper Red Rock Lake and later see a Cooper's Hawk perched on the sagebrush at the edge of an aspen grove.

June is one of the best months to see another of Red Rock Lakes' trademark species, the Sandhill Crane. We see several solitary pairs and one group of four birds feeding in the grasslands bordering Red Rock Pass Road. As we watch, one pair begins an elaborate and fascinating courtship dance, bowing, jumping, and pirouetting with outstretched wings. These stately birds stand more than three feet tall and have stunning red crowns, in marked contrast to their neutral-colored bodies, which range from light gray to rusty brown. They acquire

Sandhill Cranes (below) are one of the refuge's trademark species. These stately birds, standing more than three feet tall and sporting crimson crowns, in contrast to their gray bodies, are easy to find in grassy areas, along creeks, and in wetlands from April to September.

their rusty coloration from iron in the soil, which gets on their bills and stains their feathers as they preen. Cranes can be seen on the refuge from April to September and are easy to find along creeks, near wetlands, and in open grassy areas. But they are sensitive to disturbance during breeding season, so most crane nest sites are off limits while the birds are nesting. About 400 cranes regularly spend the summer in the Centennial Valley.

As we approach the refuge headquarters, we stop to explore several aspen groves and conifer stands close to Red Rock Pass Road and are rewarded with close-up views of Red-naped Sapsuckers (a species restricted to the intermountain West), Hairy Woodpeckers, Northern Flickers, and Downy Woodpeckers. We see Black-capped and Mountain chickadees as well as Black-billed Magpies, which seem to follow us wherever we go. It takes some looking, but we eventually find a couple of Red-breasted Nuthatches and a single Brown Creeper.

Dozens of nest boxes sit atop fence posts along Red Rock Pass Road—put there to attract Mountain Bluebirds and Tree Swallows. It seems like every other nest box is occupied. We watch bluebirds collecting nest material to line the inside of their boxes. Tree Swallows sit calmly on top of their nest boxes, providing remarkable picture opportunities.

Stopping at the refuge headquarters, we pick up some literature and a current bird list. After looking at the refuge's interesting display about Trumpeter Swans and other birds found in the area, we walk outside and bird for 20 minutes before moving on. Nearby, at the edge of the entrance road, a group of Cliff Swallows gathers mud from a puddle to build their nests, Black-billed Magpies chase each other around, and a Western Kingbird hawks insects. More Mountain Bluebirds and several American Robins round out the headquarters birds. We're just about to leave when Dan sights a medium-sized, slender gray bird in the distance. It sits on its high perch long enough for us to set up our spotting scope and identify it: a Townsend's Solitaire, a life bird for Dan.

Heading west on Red Rock Pass Road, we add Common Yellowthroat; Song, Chipping, and Savanna sparrows; Western Meadowlark; and male Red-winged Blackbirds, which display endlessly for the seemingly unimpressed females. About two miles west of the headquarters, we turn right on Lower Lake Road and head through grass-covered uplands, wet meadows, and eventually to Lower Red Rock Lake.

Lower Lake Road is open May 15 to December 1 and passes through one of the best places in the refuge to see waterfowl,

HOW TO GET THERE

The east entrance of Red Rock Lakes National Wildlife Refuge is located 33 miles from West Yellowstone and the west entrance is 24 miles from Monida, Montana. Birders can fly to Idaho Falls, Bozeman, or West Yellowstone, then rent a car and drive the rest of the way. All refuge roads are gravel or improved dirt and are generally maintained for passenger car travel. But even a moderate amount of rain can turn the roads into a quagmire, so it's always wise to call ahead for road and weather conditions. Red Rock Pass Road is open year-round from the west entrance but can be difficult for passenger cars until mid-May and again after the first snows in early November. The eastern entrance is generally closed by snowdrifts between December 1 and March 31.

There is no entry fee and camping is permitted for a maximum of 14 days at the Upper Lake and River Marsh campgrounds. Accommodations are available in the Centennial Valley at Elk Lake Resort, P.O. Box 1662, West Yellowstone, Montana 59758, telephone: (406) 276–3282; and at Lakeview Guest Ranch, Monida Star Route, Lima, Montana 59739, telephone: (406) 276–3300. Additional accommodations are available in West Yellowstone, Henry's Lake, and Lima. Gas is not available in the Centennial Valley, so fill your tank before going there.

For more information contact Red Rock Lakes NWR, Monida Star Route, Box 15, Lima, Montana 59739; telephone (406) 276–3536. For general information on Montana and an excellent travel planner, contact Travel Montana, P.O. Box 200533, Helena, Montana 59620; telephone: (800) 847–4868.

shorebirds, and wading birds. In the grassy areas and wet meadows, American Avocets sport their striking cinnamon-washed breeding plumage; Long-billed Curlews strut past with their impressive down-curved bills. We also see a few Marbled Godwits and Willets along with a couple of Spotted Sandpipers.

We come upon a series of marshes as we approach Lower Red Rock Lake. Several Wilson's Phalaropes forage conspicuously on the surface of a pond, spinning in tight circles to stir up the tiny invertebrates they feed on. Pairs and small groups of American Coots, Green-winged Teals, American Wigeons, Gadwalls, Northern Pintails, and Mallards are everywhere we look. The cattail patches are alive with the raspy calls of male Yellow-headed Blackbirds, trying their best to impress the drab-colored females. Tiny Marsh Wrens burst forth with an amazing medley of loud calls and liquid rattles from deep in the reed beds. We see their odd, football-shaped nests anchored to the reeds.

Lower Lake Road eventually ends at the outlet of Lower Red Rock Lake—a perfect spot for lunch. We set up the spotting scope and search for birds while we eat. Canvasbacks, Redheads, and Lesser Scaup dive in the open water for their midday meal, while others sleep with their heads comfortably tucked under their wings. A stunning pair of Barrow's Goldeneyes catches our attention. These handsome ducks are most common at the refuge during winter and spring with only a handful sighted during the summer, so we are lucky.

Numerous Franklin's Gulls and Forster's Terns fly over the lake; a pair of Trumpeter Swans swims slowly along the glassy water in the distance; a lone Great Blue Heron stands so motionless we nearly miss it, though it's less than 50 yards away. As we gather our gear to leave, a squadron of American White Pelicans lumbers across the lake to bid us farewell.

Red Rock Lakes National Wildlife Refuge is a special place, with solitude, isolation, and spectacular birds. So if you want to see Trumpeter Swans raising their young, Swainson's Hawks hunting for prey, or Sandhill Cranes courting, plan on visiting this remarkable refuge. It's not as far away as you think. ■

Gary Kramer is a freelance writer and photographer based in Willows, California.

Bird Conservation Begins at Home

BY THOMAS GARDALI AND DIANA L. HUMPLE

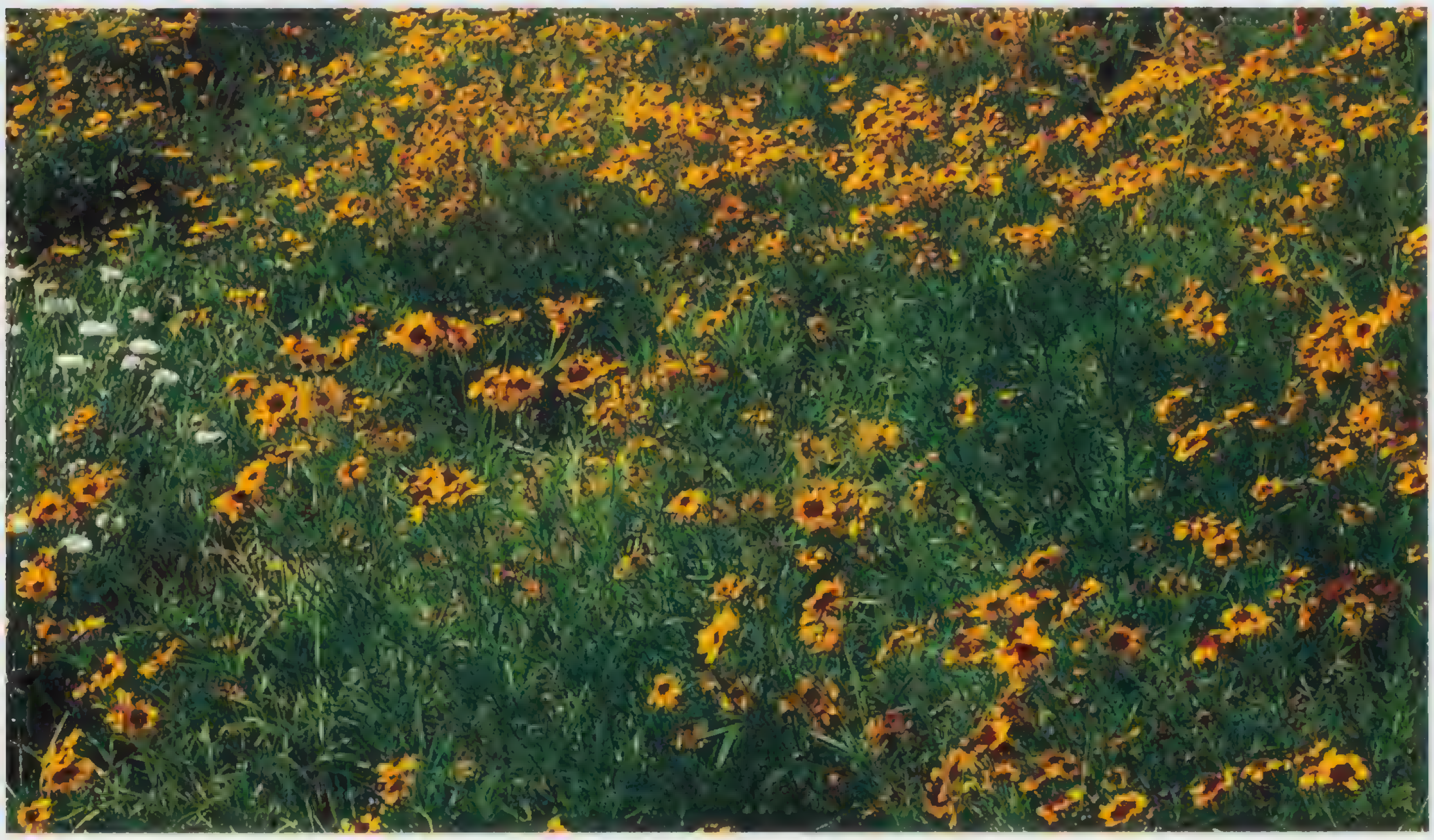
Creating vital natural habitat for birds and other wildlife in your own backyard

Although many of us go to great lengths to attract birds into our yards, putting up feeders for finches or hummingbirds, cultivating nectar producing flowers, and erecting nest boxes for bluebirds, homeowners have a far more valuable opportunity to help their local songbirds. By landscaping your yard with a naturally diverse collection of native plants, you can create vital habitat for a range of breeding songbirds, some of which may be declining rapidly in numbers.

Many bird populations are limited by a shortage of high-quality breeding habitat. Creating backyard nesting habitat for birds may be the most active way the average person can help bird populations, and it is also very satisfying and aesthetically pleasing.

Bird populations can face limiting factors anytime—during breeding season, spring and fall migrations, and winter—but long-term studies conducted by Point Reyes Bird Observatory (PRBO) in California suggest that the most severe limitations for many bird populations occur on their breeding grounds. The songbird breeding season, generally April through July in California, is the only opportunity birds

CONNIE TOOPS (2)



Homeowners can increase the amount of good nesting habitat for local birds by landscaping their property with a naturally diverse collection of mostly native plants. The yard on the facing page is a good start, with a nice canopy of native oaks and flowering dogwood. But it would be even better if the owner replaced the exotic shrubs and flowers in the understory with natives. At left, this expanse of plains coreopsis is aesthetically pleasing and provides seeds for a variety of songbirds.

have to produce young each year and is therefore an extremely critical time. This is especially true for Neotropical migrants such as Swainson's Thrushes and Black-headed Grosbeaks, which have a brief window of opportunity to breed before they must migrate south.

If birds can't raise enough young each year to replace individuals of their species that have died, their numbers steadily decline. This has already occurred in some species that were once quite common. The Warbling Vireo, for example, is encountered far less frequently at PRBO's Palomarin Field Station now than it was in previous years. Biologists banded 960 individuals there in 1976 compared with only 38 in 1997. This story and a disturbing number of similar ones make it imperative that we never take it for granted that a common species will remain common without our effort and foresight.

Many songbirds, such as the Warbling Vireo (above), are declining in numbers, perhaps largely because of the poor quality of the available breeding habitat. How can homeowners determine the best way to improve their backyard habitat? They should find out what the habitat was like before houses were built there and try as much as possible to recreate it.

BETTY DARLING COTTRILLE

HABITAT QUALITY

What factors are keeping songbirds from producing sufficient numbers of offspring? Perhaps it is the poor quality of the available breeding habitat, as well as the alarming rate at which good habitat is being degraded. Many factors can act in concert to compromise seemingly healthy habitats. Invasive exotic plants degrade ecosystems by outcompeting native plants. Such degradation simplifies the diverse plant communities in which a region's songbirds evolved. Floods and fires used to trigger a regular regrowth of dense and varied understory plants, creating excellent nesting habitat for a variety of birds, but now these natural disturbance regimes are rigidly controlled by humans. And finally, many predators such as crows, jays, raccoons, and opossums are subsidized by human activities, boosting their populations to unnaturally high numbers. How many of us have seen raccoons eating from our trash cans, American Crows feasting at a dumpster, or Blue Jays dominating a feeder in winter? An increase in the number of predators causes an increase in mortality rates and a decrease in reproductive success—a sure formula for declining bird populations. Nest predation is particularly high for songbirds that build exposed, open-cup nests, which are readily accessible to nest robbers.

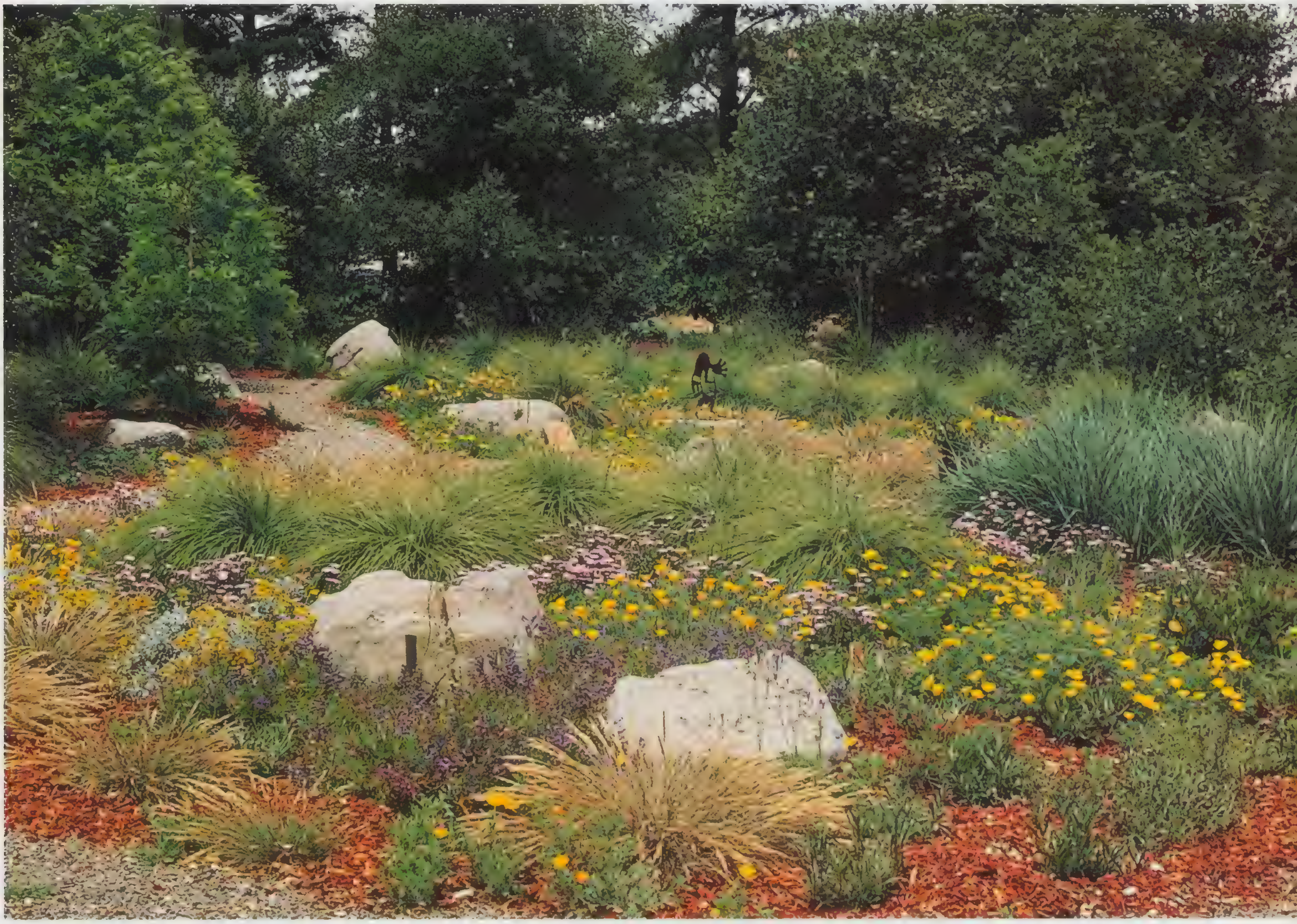
HOW YOU CAN HELP

Birders who are concerned about songbird conservation may not realize what an excellent opportunity they have to address these issues in their own backyards. According to many conservationists, landscaping with native plants to improve backyard nesting habitat is one of the best ways to help birds. And, in addition to these conservation benefits, "restoration" gardeners have a unique opportunity to watch the breeding and nesting behaviors of birds up close, adding a wonderful sense of intimacy and enjoyment to their bird-watching experience.

To create high-quality breeding habitat for birds around their homes, people must first recognize and value the beneficial role that native habitat can play in their yards—instead of defining a beautiful garden solely as one that is well-manicured, trimmed, and orderly. Bird enthusiasts should recognize the benefits to wildlife of a yard that mimics local native plant communities and appreciate its own wild beauty.

WHERE TO BEGIN

The first step in turning your yard into excellent bird habitat is to determine what the ideal makeup of that habitat should be. Ask yourself, what did your area look like before houses were built there? Was it oak woodland? Mixed



DAVID FROSS

evergreen hardwood forest? Chaparral? Take inspiration from the natural plant communities around you. Judith Larner Lowry (author of *Gardening with a Wild Heart*) suggests beginning by exploring your neighborhood and trying to determine which native species were once most common: "An oak sprouting by the sidewalk, a small patch of miner's lettuce in the grass, toyon thrusting dark red berries through a fence . . . Hints and clues, remnants and relics. The survivors." You may want to take a walk in nearby uncultivated parks and call local plant societies, nature centers, or state parks to find out more about the historical plant community that formerly thrived in your area.

PLANT NATIVE SPECIES

After determining the native habitat type where you live, begin choosing appropriate plant species—those that naturally belong there. Birds have evolved a long relationship with native plant species, and by planting them you support the nest-site and nutritional needs of local birds. The same plant "survivors" that provided you with clues about your original local habitat might be the easiest species to bring back and should perhaps be your first choice to plant. Growing native plants instead of exotic ornamental plants is simply another form of gardening, but once the new plants have become established, your garden may need far less maintenance (and water) than a garden full of ornamentals. And if it's aesthetics you're after, once you start exploring the native plants in your region, you may well realize that many are just as beautiful, if not more so, than the exotics you've been planting. The sight of flowering blueblossom (*Ceanothus thrysiflorus*) and California buckeye (*Aesculus californica*)—which carpet much of central California—is dazzling, and it is difficult indeed to find nonnative plants that rival their beauty.

If you have a fond attachment to certain exotic plants in your yard, you may choose to keep the ones that are most compatible with the habitat structure you're trying to create. And if you do plan to remove all of your exotic plants, you may decide to make these modifi-

In America, all too many people regard a large expanse of closely cropped lawn, surrounded by a few well-trimmed trees and shrubs, as the ideal backyard garden. But bird enthusiasts should strive to mimic their local native plant communities in their gardens and learn to appreciate them for their wild beauty and benefits to wildlife. The homeowner above has succeeded in creating a garden that is visually stunning and extremely beneficial to the local birdlife.

CONNIE TOOPS

Backyard conservationists grow plants of varying heights in their gardens, using native trees, shrubs, and herbs to provide canopy, midstory, and understory habitats. The understory of shrubs and herbs is particularly important to many nesting birds and is often missing in backyard gardens. Above, Inca Doves nesting in a native palo verde tree in an Arizona backyard.

cations slowly, removing only a few plants at a time. In either case, it is crucial to realize that some exotic plants are far more invasive than others and that having them in your yard may threaten nearby natural habitats. In California, these invasive species include such common plants as tree-of-heaven (*Ailanthus altissima*), Pampas grass (*Cortaderia* species), Cape ivy (*Delairea odorata*), Scotch broom (*Cytisus scoparius*), giant reed (*Arundo donax*), and eucalyptus trees.

Be sure to keep in mind the characteristics of your land, the same as you would if you were planning a conventional garden. Take note of the slope, moisture, and type of soil, as well as the presence or absence of a natural water source so that you can create the most appropriate plant community that your property can—and should—sustain. In much of California's Central Valley, for example, homeowners who have a creek passing through or near their property should plant early successional riparian plants such as native willows (*Salix* species), elderberry (*Sambucus* species), and California blackberry (*Rubus ursinus*), which will provide habitat for numerous beautiful songbirds such as Lazuli Buntings, Blue Grosbeaks, and Song Sparrows. Lacking such a water source, birders in this area should consider planting the rare and majestic valley oak (*Quercus lobata*), which will provide excellent shade in their yards and also a nesting substrate for Oak Titmice, Western Wood-Pewees, Ash-throated Flycatchers, and Western Kingbirds.

CREATE A COMPLEX PLANT COMMUNITY

Although removing exotic plants is a step in the right direction, simply growing native species in your yard is not enough to create excellent bird habitat. Birds build their nests in a wide variety of locations, from directly on the ground (as Spotted Towhees often do) to the tops of the tallest trees (as Bullock's Orioles do), using a wide variety of plants. As such, birds require a structurally complex and diverse plant community for nesting. To achieve this diversity, you should plant species that will occupy several height classes (canopy, midstory, and understory), using native trees, shrubs, and herbs planted in a mosaic pattern with clumps containing multiple species. Perhaps most important in most regions of California is the understory of shrubs and herbs. This feature, often conspicuously missing from backyards, is vital to many nesting birds. Also important for cavity-nesting species—such as woodpeckers, chickadees, titmice, and swallows—are dead or dying trees and limbs. You should resist the temptation to remove dead trees unless they present a safety hazard.

Some of the houses with restored backyards in coastal California are tucked into canopies of California bays (*Umbellulara californica*) and coastal live oaks (*Quercus agrifolia*), where Bushtit parents feed nestlings begging from a pendulum nest camouflaged with lichen. Beneath these trees exists a midstory of coyote bush (*Baccharis pilularis*), hazelnut (*Corylus cornuta*), and California blackberry, from which a Song Sparrow may at any time appear with nest material in its bill. Allen's Hummingbirds often feed on the nectar of bush monkeyflower (*Mimulus aurantiacus*) before returning to their nests in nearby blackberry brambles.

Imagine your house surrounded by the trees, shrubs, grasses, and wildflowers that at one time defined the region that you now call home. And imagine that vegetation occupied by the native birds that you love.

REDUCE PREDATOR PRESSURE

You can take several steps to reduce the chances that the birds in your yard will be killed by predators. One predator that has a serious impact on birds and other wildlife in suburban areas is the domestic cat. If you have a cat, the only way to protect your local birds from it is to keep it indoors; even well-fed cats kill birds. You should also eliminate food sources such as garbage or outdoor pet-food dishes that might attract stray cats as well as raccoons, opossums, or jays. If you have a compost pile, consider using a covered worm bin instead. And remember, in addition to providing breeding habitat, natural plant communities often supply birds and their nests with much more protective cover than a conventionally landscaped yard would. In other words, predators that must search through thick habitat with varied plant species are far less likely to find nests to rob than predators hunting in a sparse, unnaturally simplified plant community.

MAKING CONNECTIONS

Spread the word and create networks of bird-friendly backyards by working with your neighbors, gardening clubs, schools, and local parks. Connected habitat patches are the most valuable to birds, because they enable many species to disperse into or out of your yard. For example, the tiny Wrentit, a denizen of dense scrub plant communities, rarely crosses even small open areas and depends on vegetation corridors to disperse.

In Briones, a small town on the Central California coast, where homes nestle deeply into the landscape, local restoration gardeners are continually rewarded for their efforts to create native habitat in their yards. These rewards include seeing coyote bushes bloom like cotton in the fall or Douglas irises open their stunning purple petals in spring; hearing the long, melodious song of a Warbling Vireo singing from its nest in a nearby tree or a Song Sparrow belt out a loud territorial song from a perch that didn't exist two years earlier; and watching a White-crowned Sparrow fly into the yard, carrying food for its young. But perhaps the greatest reward of all for these gardeners is to look at the coastal scrub community they've created in their yards and watch a Wrentit family foraging together, the adults feeding the juveniles that have grown to fledging age only because this habitat was created for them. Perhaps the parents will share a small portion of their territory with one of their offspring (which is a characteristic of this species), who will in turn raise its own family the following summer. You can bet that no one will miss the exotic plants that once lined the large, mowed lawn; instead, the owners have the satisfaction of knowing that these Wrentits could not have raised their young successfully without this otherwise unavailable piece of a threatened California habitat. ■

The Wrentit (above) is a West Coast species found only in dense scrub plant communities. These birds rarely cross open areas, so they depend on vegetation corridors to disperse. A number of California "restoration gardeners" have had the satisfaction of having Wrentits breed in their yards, in habitat that was created for them.

RICH STALLCUP

Thomas Gardali and Diana L. Humple are biologists at Point Reyes Bird Observatory in Stinson Beach, California.

RESOURCES

Many resources are available to help you create your wildlife-friendly backyard. Local native plant nurseries can provide seeds, plants, and advice. The Point Reyes Bird Observatory web site <www.prbo.org> has information on designing backyard breeding habitat for birds, a bibliography of some helpful books (including Judith Larner Lowry's *Gardening with a Wild Heart*), and links to native plant societies and other pertinent organizations around the country, including the National Wildlife Federation Backyard Wildlife Habitat Program and the National Audubon Society.

CLARK SMITH

BUILDING ON THE PAST

The Lab soars into the new century with a bold mission statement, a burgeoning array of citizen-science programs, and plans for an expansive new facility

Blank Page Digitally Inserted

BY CLARE ULRICH

In the early decades of its history, the Cornell Lab of Ornithology not only lacked a building of its own, it didn't even have permanent office space. Founded in 1915 by Arthur A. "Doc" Allen, the "Lab" was shuffled from building to building on the Cornell campus. And yet during those early years, the Lab was already a place of innovative bird research, where many top ornithologists completed their graduate studies. The first recordings of bird songs—for which the Lab would eventually become world famous—took place then, as well as the Lab's first efforts to engage the public directly in the study of birds. Doc Allen always firmly believed that developing a strong public interest in birds was the most effective way to promote bird conservation.

Lab founder Arthur A. Allen (at left, above) and his son, David, work on one of the new nature trails at Sapsucker Woods in the 1950s. Some of the "woodland" trails they laid out at that time actually ran through open pasture, where the trees had long-since been clear-cut. The architectural rendering on pages 24-25 is an artist's conception of the new Lab facility.

RICHARD B. FISCHER

The day eventually came when the Lab of Ornithology outgrew the space that Cornell provided on campus, and it was time to start searching for a new home. Businessman Lyman K. Stuart generously offered to provide funding to purchase a site and construct a new facility. There was probably never any doubt that the Lab would be housed at Sapsucker Woods, a favorite birding area of Doc Allen's since he first came to Ithaca as a Cornell undergraduate in 1903. Unfortunately, in the intervening years, a large part of the woods had been cleared for agriculture. The site where the Lab facility was erected stood in the middle of an empty field.

But Doc Allen and his colleagues had enough imagination to envision the kind of space they would need to study birds effectively for decades to come. Working hand in hand with the architects, they designed a building that would accommodate their research needs for nearly the rest of the 20th century. And they also set the clock back on the ecological destruction that had taken place at Sapsucker Woods. Rather than destroying habitat to provide a building site, they improved it, carving out a 10-acre pond for waterfowl and other wildlife and allowing the area to reforest naturally. It's eerie to look at old pictures of Lab staff standing on spent farmland in front of the Lab construction site, laying out the routes of "woodland" nature trails and boardwalks. They clearly wanted to create a place that would inspire visitors as well as staff and house the growing programs of the Lab. And they succeeded. Now Sapsucker Woods is home to lush forest and wetlands, providing habitat for numerous migratory and resident birds.

As it enters the new century, the Lab once again faces the kind of intense growing pains it experienced in the mid-1950s when it left the Cornell campus. The current building, designed to accommodate 20 to 30 staff and graduate students, is now bursting at the seams as new research and conservation projects vie for space in an already crowded facility. The Lab staff is now approaching 100 and growing quickly. Despite the addition of several temporary mobile office facilities, the time has clearly come to build a new Lab facility—one that will carry this organization boldly through the 21st century.

The new Lab building, which will be erected on the eastern shore of Sapsucker Woods pond, will be five times the size of the existing structure and include an expanded ornithological library, a large auditorium, all of the Lab programs, as well as the entire Cornell Museum of Vertebrates. Although all traces of the current building will be gone when the new one is completed, the project picks up where Doc Allen left off, creating an area where scientists and interested citizens can interact together in the study of birds.

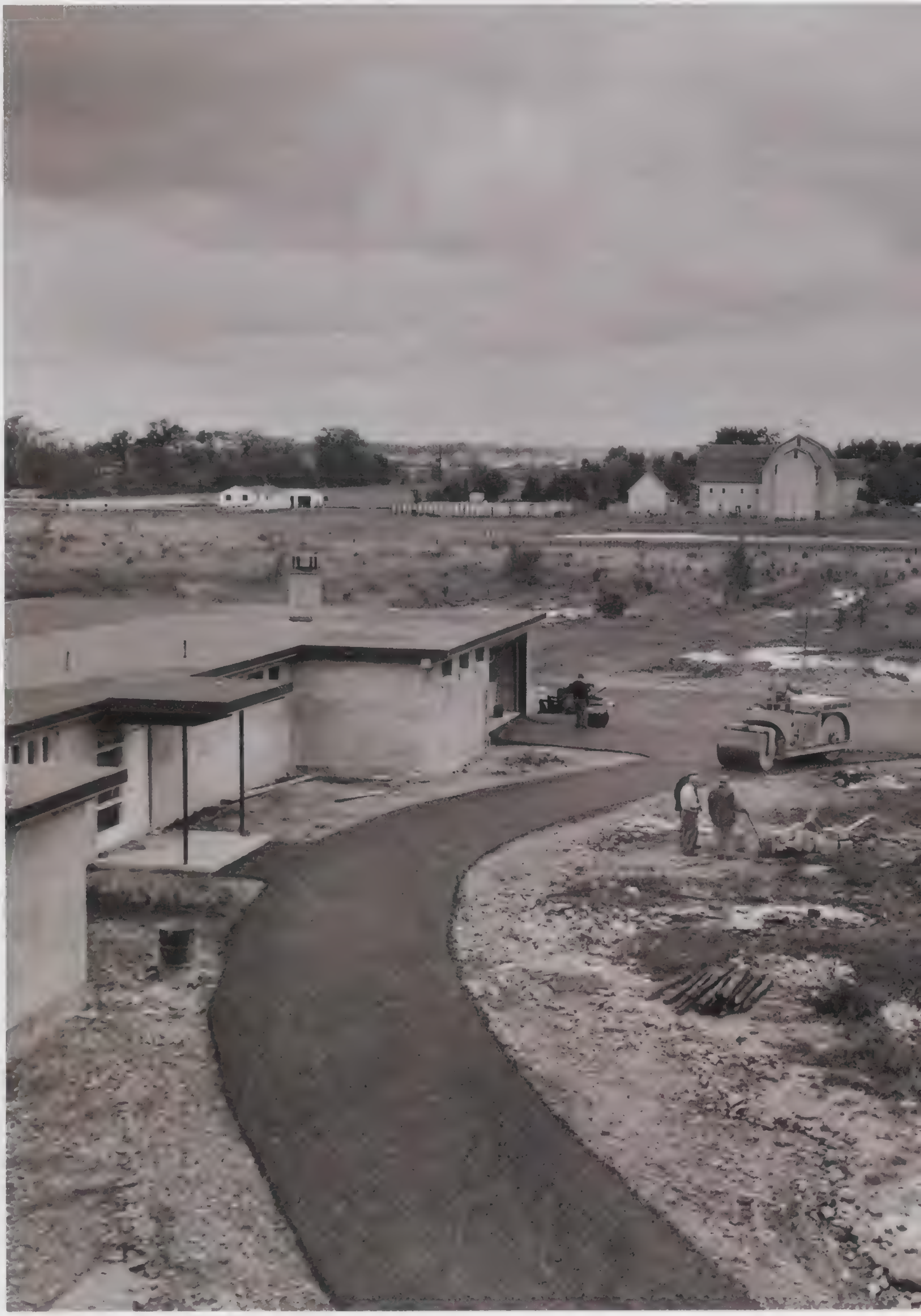
"We can't lose sight of what the Lab is all about," says Lab director John Fitzpatrick, glancing through his office window at the waterfowl around the pond. "Our aim is to supply the burgeoning population of committed bird enthusiasts with opportunities to put their skills to work for conservation—something Arthur Allen would have approved of wholeheartedly. During the past year, our senior staff held a series of day-long discussions to look at where the Lab is going in the century ahead. By consensus we created a new statement of purpose to guide our ambitious enterprise: 'To interpret and conserve the earth's biological diversity through research, education, and citizen science focused on birds.' To accomplish this mission will require us to explore new Internet-based technologies fully, expand our staff in key areas, and create a building adequate for our growing needs."

At present, the Library of Natural Sounds, Bioacoustics Research Program, and Education/Citizen Science reside in the main building with the administrative offices. But most of the scientists and computer programmers who work hand in hand with these programs are housed across the street in four prefab office trailers. High-tech scientific research and computer programming go on in these offices and continue to earn the Lab international prominence, but those operations can be unexpectedly disabled by something as simple as field mice chewing through the fiberoptic cables that run underneath. These trailers will be removed after the new building is finished.

When the Lab completes construction of the new building in the year 2002, it will provide abundant space to accommodate programs that have expanded tremendously since the 1950s. "Each of the Lab departments is in the midst of realizing major visionary advances in promoting research, education, outreach, and conservation," says Jack Bradbury, director of the Library of Natural Sounds (LNS). "The new building will allow us to integrate these separate programs in very powerful ways."

Everyone will be housed in one building, and the greatly expanded space will allow staff to increase. John Fitzpatrick projects that during the next 10 years, two to three new faculty members and more than 50 staff members will be added, enabling the Lab to complete projects that have lagged because of a lack of staff and space and to begin new ones that have temporarily been put on hold.

For example, the LNS collection of 140,000 recorded bird songs and other animal sounds is the largest archive of its kind in the world. The recordings currently exist on reel-to-reel tapes, and the documentation for the sounds is stored in a non-web-accessible database on one desktop computer. More staff and closer collaboration with computer programmers and technicians will expedite the tedious process of converting the collection from tapes to Digital Versatile Disks (DVDs) and transferring it to a networked database. After 10 years of storage, recording tape becomes brittle, and material can be lost as pieces break off. Some of the recordings in the col-



The picture below shows the original Lab building in its final phase of construction in 1956. The Lab turned back the clock on the devastated habitats at Sapsucker Woods. Now the vast barren area beyond the building is a lush, bird-filled woodland.

DAVID G. ALLEN

lection are already that old or older, so time is crucial.

LNS increases its holdings by more than 5,000 cuts a year. Digital technology, greater storage and editing space, six acoustically isolated sound studios, and a state-of-the-art mastering studio will enable the library to triple that accession rate and cut the time it takes to archive new recordings, from eight hours to two hours for every hour of recorded sounds. The digital database will also simplify the duplicating process by allowing sounds to be downloaded to users in a matter of minutes.

Sound engineers from the Lab's Library of Natural Sounds, above, record bird songs at Sapsucker Woods. The Library, the largest of its kind in the world, is currently converting its entire collection to a digital format, which will make recordings vastly more accessible. At right, the Scarlet Tanager was one of four tanager species studied by Project Tanager—a landmark program at the Lab that for the first time employed a huge network of citizen scientists to examine complex scientific questions.

Research, equipment, and computer software developed in the Lab's Bioacoustics Research Program (BRP) are used by scientists around the world to study animal communication and by organizations such as the Environmental Protection Agency to monitor the health of wildlife populations. A specialized buoy invented by BRP to record deep oceanic sounds is being fine-tuned in a workshop down the street from the main building. Kurt Fristrup, BRP's assistant director, walks there several times a day to confer with the electrical and mechanical engineers who are building and testing the equipment. "Developing advanced instrumentation is critical to our success," says Fristrup, "but the way things are set up now, with people and operations separated, our engineers sometimes lose sight of how important their work is to the Lab's overall mission." The new facility will bring BRP's scientists and engineers together.

TOP: TIM GALLAGHER. BOTTOM: ALAN MURPHY

In recent years, birds have become the focus of a revolutionary combination of basic research and public outreach known as citizen science, in which diverse people, often nonscientists and schoolchildren, help the Lab gather data on birds. BirdSource, the Lab's interactive web site developed in partnership with the National Audubon Society, allows citizen scientists to submit and exchange data online.

"We have the most active web site at Cornell by a huge gap," says Fitzpatrick. "Last February's Great Backyard Bird Count received nine million hits during a four-day period. That's just the very tip of what we can actually provide. Our Home Study Course in Bird Biology is already the best in the world, but it's nothing compared with the one you're going to see in a couple of years that will use live videos over the web."

Once the new facility is built, BirdSource director Steve Kelling hopes to hire another 20 to 30 people to handle the volume of ongoing and new projects, which will have a powerful impact on the Lab's Education/Citizen Science program. The director of that program, Rick Bonney, is working closely with the BirdSource crew to develop a database that can hold records from all the citizen-science projects and link them together. Once that is

A LAB FOR THE 21ST CENTURY

In creating a new home for the Lab of Ornithology, the primary consideration is that the new facility must not have a negative impact on Sapsucker Woods, its habitats, its wildlife, or its natural appearance. With this in mind, the Lab commissioned the Hillier Group—a New Jersey–based architectural firm—to design the building, working closely with the Lab's senior staff.

Hillier has a reputation for creating buildings that embody an institution's philosophy. The firm believes that buildings should be rooted meaningfully to their place and informed by the ideas, values, and traditions of the people they serve. Alan Chimacoff, director of design for the new facility, and Nick Garrison, project architect, are taking great care to design a structure that will complement and coexist harmoniously with the ecosystems of Sapsucker Woods.

"In searching for the right place to build the new Lab, we looked for a site that would not disturb the wetlands but would still maintain the focus on the pond," says Chimacoff. The ideal site turned out to be on the eastern shore of the 10-acre pond, right beside the current Lab building, which will be demolished.

"Capturing the experience of the pond was essential to our design," explains Garrison. "We wanted to retain the surprise of walking into the Lab and suddenly seeing the pond through big picture windows, with birds coming almost right up to your feet." An 84-foot-wide expanse of floor-to-ceiling windows will be the dominant feature of the new facility. Visitors entering the building though the main doorway and turning left will be welcomed by an expansive view of the pond and its waterfowl as well as the sky. And one of two proposed new bird-feeding gardens will enhance that view.

Wood and stone from local quarries will lend an earthy feel to the interior of the Visitor's Center. A massive stone fireplace will warm the room and enhance its atmosphere on chilly winter days. And several spotting scopes will be permanently available for the use of Lab visitors. The heart of the current Lab facility—the magnificent Fuertes Room, with its beautiful teak paneling and spectacular original paintings by famed artist Louis Agassiz Fuertes—will be recreated in the new building, in a space twice the size of the old one. And one of the room's double-height walls will serve as a gallery to display Fuertes paintings as well as changing exhibits.

In another nook of the Visitor's Center, guests will be able to explore a new listening room and select recordings from the Library of Natural Sounds on interactive displays. Piped-in outdoor sounds will be heard throughout the center.

The two-floor facility will occupy 80,500 square feet, but in height it will not exceed the trees it nestles among. Curves and rising and falling slopes will create a sculptural facade that appears to recede and even vanish into the landscape, depending upon your point of view. The exterior walls will be covered with textured cedar siding, to blend in well with the surrounding woods, and the roof of aged zinc will be reminiscent of the tin roofs prevalent among rural buildings in Upstate New York.

Hillier is working closely with the Boston-based landscaping firm of Childs Associates to create a distinctive natural experience for visitors from the moment they enter the parking lot until the time they depart. Placement of indigenous plants along the paths to the building will underscore the Lab's commitment to the conservation of natural ecosystems and complement the trails that traverse the 220-acre wooded setting. A bridge built of local Llenroc stone will provide a picturesque passage to the entryway of the new building, and a second entryway will connect the Visitor's Center directly with the trails of Sapsucker Woods—the Lab's home and its inspiration.

The Lab staff and project architects are determined to preserve Sapsucker Woods (above) as a haven for woodland wildlife.

TIM GALLAGHER

ALAN MURPHY

Now that the Lab has demonstrated the effectiveness of using citizen scientists across North America, new projects based on techniques used in Project Tanager and Birds in Forested Landscapes are being designed to look at the habitat needs of declining birds, such as the Golden-winged Warbler (above).

accomplished, he can bring more projects to the classroom and offer web-based home-study courses.

"The web has opened up completely new ways for citizens to explore science and interact with scientists," says Fitzpatrick. "Its immediacy is what makes it so engaging. People can record their notes on the web, submit data, request information, get updates on that information, integrate the data, and receive answers to questions without waiting for a hard copy to arrive in the mail. It has made education—and basic scientific exploration—more accessible than it's ever been in history."

The huge BirdSource web site uses 40 computers, which are crowded into one office-trailer. "One of the most exciting features of the new building for us," says Kelling, "will be having a space large enough to house all of our computers, including a massive server system, and the capability to link them to a high-speed network at least 10 times faster than our present system. The BirdSource database currently contains more than 100 million pieces of information. We'll be able to develop new applications for this database and make the data more accessible through the web site. The computer room will be our gateway to the world."

Another essential component of the Lab is the Cornell Museum of Vertebrates, which is currently housed about a mile away. It is nearly as old as Cornell University, and its collection of mounted birds; vertebrate skins; skeletons; fluid-preserved fish, amphibians, and snakes; eggs; and nests is one of the best among the nation's universities. It contains specimens that famed bird artist Louis Agassiz Fuertes painted.

"Bringing the museum to the new building will give scientists and students direct access to actual organisms that lived in earlier times," says museum director David Winkler. "That is indispensable to researchers who want to observe variation within species, tracing the effects of environmental toxins on organisms over time, studying gene preservation, or performing DNA extractions." New wet and dry labs will aid those investigations, and classroom space for 35 students will enable this research—and the museum's 1.5 million specimens—to be accessible, hands-on educational resources. Winkler has led a robust effort to document the collections using digital imaging. He envisions these images of specimens eventually being linked to LNS sound recordings and video images to enhance their potential for research and education.

Supporting all of the Lab's activities will be a 2,225-square-foot reference library on the second floor of the new building. The current library stands in a hallway in the main building between the education and administrative offices. As more staff have joined the Lab, the library space has steadily diminished to the point that it now holds only about one-fourth of the Lab's collection of books and periodicals. The remainder is kept in storage and is difficult for staff and visitors to access. The new building will consolidate the entire collection and enable the Lab to accept donations that are currently on hold until the new library is built. Carrel space and computer workstations will make it a fully functional library for the first time.

Perhaps the single most important change the new facility will bring is to enable Lab scientists, faculty, students, and staff to interact more frequently. "A synergy occurs when people with diverse expertise work closely together," Kelling points out. "Right now," adds Fristrup, "I have a limited knowledge of the scientific content of what the Education/Citizen Science and Bird Population Studies staffs do in the trailers, and they have almost no idea of what we're doing here. Some of the most interesting collaborations emerge from informal encounters. The new building will cultivate an integrated scientific community." For this reason, designing shared areas for meetings and impromptu interactions is a high priority. Flexible space that can be modified without tearing down walls is also being designed to accommodate growth and the changing needs of Lab programs.

Steve Kelling (above center) heads a crew of computer engineers and researchers, who are creating interactive bird research programs that allow anyone with a computer and an Internet connection to participate directly in the scientific process. This past February's Great Backyard Bird Count (at left) received more than 9 million hits during a four-day period.

Knowing that the present working conditions are temporary has sparked a wave of new collaborations. BirdSource is gearing up to work with LNS on developing a program in which schoolchildren use tape recorders to record bird songs in their yards and then download the sounds from the tapes to their computers and send them electronically to the Lab. The data will assist scientists with questions about song variation or regional dialects within common bird species.

Steve Kelling and his crew are currently compiling an electronic field guide to birds. Users will be able to click on an image of a bird to get information about the species. He predicts that in five years the BirdSource web site will offer video images so users can also watch bird behavior. Rick Bonney is eager to incorporate those videos into home-study courses, and LNS plans to piggyback video images onto the new technologies they are already implementing for sounds, adding valuable contextual information to the sound recordings.

The Bioacoustics Research Program and LNS are collaborating on new software that will allow scientists in remote locations to perform sophisticated analyses and comparisons of sounds in the collection. "The Lab will be the only institution to offer the analytical tools necessary to undertake this kind of study," Jack Bradbury points out.

André Dhondt, director of Bird Population Studies, is looking forward to having more space for students to help him convert hundreds of thousands of three-by-five-inch cards containing irreplaceable information on nesting birds into an electronic database. Lab scientists use the data to interpret bird movements and year-to-year population changes, which help to set conservation priorities and create land management guidelines. BirdSource and Education/Citizen Science are eager to integrate Dhondt's data into their projects.

As it has been since its birth early in the 20th century, the Lab of Ornithology is a work in progress, constantly changing and growing, but never losing sight of its commitment to work on behalf of birds and the habitats they need to survive. And that vital mission will continue through the century ahead. ■

To find out more about the Lab's building campaign and how you can help, contact associate director Scott Sutcliffe, Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850; telephone: (607) 254-2424; e-mail: <sas10@cornell.edu>; or call Jim Mazza at (607) 254-7497; e-mail: <jam16@cornell.edu>.

TOP: TIM GALLAGHER. ILLUSTRATION BY KEN ROSENBERG.

IS RAPTOR REHABILITATION A WASTE OF TIME?

BY SCOTT DRISCOLL

Some say that the time, effort, and money spent on returning injured hawks, owls, and eagles to the wild would be better spent on saving wildlife habitat

On a sunny morning in October, a Boreal Owl slams into the window of a private home in Delta, British Columbia. The owl had migrated from its summer nesting area in the dense northern forests. Within an hour, a volunteer has delivered the stunned bird of prey to Orphaned Wildlife (OWL), British Columbia's largest raptor rehabilitation center.

Volunteers, excited by the rare guest, crowd the exam room. "In all my 25 years in this work, I've never seen a Boreal Owl," says Bev Day, director of OWL. Situated on five acres of agricultural flats near the border with Washington State, OWL takes in close to 300 eagles, falcons, Ospreys, hawks, and owls each year. Day rolls up her sleeves and starts the Boreal Owl's chart. Val Lofvendahl, a staff supervisor, wraps the 10-inch gray-feathered bundle in a "diaper" and lays it on the scale. Below its curved brow, the docile but nervous bird's striking yellow eyes watch every move. One hundred and fifty-five grams reads the scale. "He's been eating well," observes Day. "Let's take a look at the wings."

Lofvendahl returns the tiny owl to the exam table and removes the diaper. "Close your eyes," she says to Sherrie Starchuck, the 19-year-old part-time helper who picked up the bird in Delta. "You'll feel if something's wrong." Lofvendahl holds the owl on its back, securing its talons with her hands.

Starchuck closes her eyes. Everyone waits anxiously as she eases her fingers underneath the bird and spreads both wings. Her hands blindly

A tiny Boreal Owl hits a window in a British Columbia home. Less than an hour later, the bird is being examined at a rehabilitation center, at left. If all goes well, within a few months the owl will rejoin the wild population. At right, success: a rehabilitated Bald Eagle gets another chance at life. Was it worth the trouble? Even the experts disagree.

LEFT: SCOTT DRISCOLL. RIGHT: SUSAN DAY/DAYBREAK IMAGERY

trace the wing bones from shoulder to tip. When Starchuck's eyes open, they're bright with good news.

"Everything checks out fine."

"Probably a bad headache and a sore shoulder," says a relieved Day, hoping an x-ray will confirm her diagnosis. "Nothing a few days rest shouldn't cure."

A scenario similar to this occurs nearly every day at the estimated 250 government-licensed raptor centers in the United States and at additional centers in Canada. It's a huge undertaking. Something approaching 8,000 ill, injured, or orphaned birds of prey are treated and released back to the wild each year, according to the nation's leading practitioner of rehabilitation, Pat Redig, veterinarian and director of The Raptor Center at the University of Minnesota. The question often being asked, however, is should these raptor rehabilitation efforts continue?

Raptor rehabbers examine an injured Sharp-shinned Hawk (above), just one of the thousands of ill, injured, or orphaned raptors treated by rehabilitation centers each year. Now that the Peregrine Falcon (facing page) has been removed from the Endangered Species List and the Bald Eagle will soon follow, some wildlife biologists are questioning whether the costs of raptor rehabilitation outweigh the benefits.

SCOTT DRISCOLL

This question has recently taken on a new urgency. With the removal of the Peregrine Falcon from the endangered species list in August 1999, and with the Bald Eagle proposed for delisting and expected to follow suit in the summer of 2000, many biologists are pushing for a reassessment of wildlife management priorities and questioning the value of offering expensive medical care to every bird dropped off at these centers.

Supporters of rehabilitation point out that between 80 and 95 percent of what continues to harm raptors—collisions with power lines, windows, and automobiles; poisoning from lead and pesticides; and, most pervasive, loss of habitat—results from human contact. We owe it to the birds, they argue, to do whatever we can to restore breeding populations, to conduct research, and to educate the public by bringing people into contact with the birds. Nay-sayers feel that this reaching out to "nature's born losers" is little more than conscience salving. Rehabilitation, they feel, distracts us from a more important purpose: to restore habitat before whatever biodiversity we have left is lost forever.

"There's good and bad to both views," says Bud Anderson, director of the Falcon Research Group in Washington State. The one point on which he feels everyone would agree is that "every bird saved is worthwhile."

But why the concern for raptors at all? Like other highly visible predators at the top of their food webs—the grizzly bear, the gray wolf—raptors are indicator species. Because environmental contaminants become concentrated in top predators, says Joe Shelnutt, veterinarian and director of the Southeast Raptor Rehabilitation Center (SERRC) at Auburn University in Alabama, "by monitoring birds of prey, we monitor the health of the environment." Adds Julie Chantler, director of the Big Sky Wildcare Raptor Center in Bozeman, Montana, "If raptors are not well, something may be amiss in the habitat that could affect humans as well, as was demonstrated with DDT."

In 1782, when the Bald Eagle, the "sea eagle with the white head," was adopted as our national symbol, an estimated 225,000 of them soared along our great waterways. In the Pacific Northwest, along Washington's Skagit River—one of the continent's most popular wintering grounds for Bald Eagles—the sight of these majestic eagles, buoyed by seven-foot wingspans, diving for migrating salmon was common. So common, one viewer counted 80 of these magnificent birds in one leafless maple, the eagles' white heads brilliant against the dusky forest. But they were fast disappearing. By 1963, only 417 pairs were nesting in the wild in the entire lower 48 states.

Peregrine Falcons, one of the fastest living creatures ever to fly, achieving swept-wing diving speeds of 200 miles per hour, apparently were not fast enough. By 1972, this preferred hunting companion of emperors and kings, reduced to a precarious low of 39 nesting pairs in the United States (excluding Alaska), had all but vanished from our cliffs, where the species had nested for eons.

Ecological disaster seemed all but unavoidable, until the Environmental Defense Fund went to court in 1972 and forced the banning of DDT. The following year, 1973, saw the enactment of the Endangered Species Act, and rehabilitation began in earnest. It wasn't just about saving birds. The rallying cry of those times, to "give something back to the earth," in the words of Bev Day at OWL, suggested a larger goal: to restore a balance between humans and nature. This idea of balance had precedents as far back as Ralph Waldo Emerson, who suggested that "we can use nature as a convenient standard . . . the meter of our rise and fall." Raptors, our beloved Bald Eagles and the rest, became the canary in the mineshaft.

Many raptor species are still in desperate straits. The California Condor remains one of the world's rarest birds, teetering on the brink of extinction with a total of 161 individuals (including captive birds), up from a 1982 all-time low of 21. The threatened Northern Spotted Owl is dwindling along with its nesting home, the Pacific Northwest's old-growth forests. The endangered Aplomado Falcon, the threatened Burrowing Owl, Florida's Snail Kite, and the Swallow-tailed Kite in the lower Mississippi Valley—all of these birds, along with numerous other species of hawks and owls, have lost habitat and are in danger of disappearing forever. No birder would suggest that we chalk up their demise as the inevitable cost of living near people. But what's the right thing to do?

"It's unacceptable to me," says Pat Redig, throwing down the gauntlet on behalf of rehabbers, "that an eagle or kestrel that's flown into a power line or been poisoned should be left to die. If we can intervene in that process, we should."

In a seminal paper Redig cowrote for the North American Wildlife and Natural Resources conference in 1995, he attempted to counter the argument that 30 years of rehabilitation have had no appreciable impact on the health of raptor species. Redig presents figures from 32 raptor centers—roughly one-eighth of the total—showing that over these centers' lifetimes, 13,735 raptors had been successfully treated and released back to the wild. The Raptor Center (TRC) itself has treated and released roughly 5,000 birds of prey since its inception in 1974—42 percent of a total of nearly 12,000 raptors that were brought there for care.

It's a large number of birds, to be sure, but to be considered successful, a released raptor must survive in the wild long enough to breed, without increasing the mortality of its species. Follow-up research in Minnesota suggests that TRC's released raptors have shown "normal longevity and [have] reassimilated into the pool of breeding birds." A 1991 study of 18 released Bald Eagles, using tail-mounted radio-telemetry devices, found that at the end of six months only two had died. Chantler, in Montana, conducted a two-year study of 25 Bald and Golden eagles, Northern Goshawks, and Peregrine Falcons similarly fitted with these tail-mounted devices and found that only three died or had to be brought back to the center. Redig's survey of 32 raptor centers showed that the Bald Eagle had an especially high survival rate upon release—on average 19 out of 20. Such numbers, he concludes, indicate that rehabilitation, properly done and with release into adequate habitat, does return viable birds to breeding populations.

TIM GALLAGHER

"The heart of the problem," says Bill Burnham, president of The Peregrine Fund, "is that to

RICHARD DAY/DAYBREAK IMAGERY (2)

increase a species you have to address the factors limiting the species." Currently based at the World Center for Birds of Prey in Boise, Idaho, The Peregrine Fund is helping to rescue the California Condor and has biologists in places as diverse as Madagascar and Papua New Guinea involved in programs to study rare raptors and boost their numbers. "Introducing more individuals into a habitat without first addressing the limits on its carrying capacity means the released birds have to move out or die," says Burnham.

Although Redig's surveys seem to find that the carrying capacity of many habitats has room for the released raptors, Dale Brooks has found otherwise. A veterinarian and director of the California Raptor Center, Brooks says "up to 80 percent of the birds we release are dead within one year." The primary reason the birds don't survive, he concludes, is that they lose muscle tone while they're in captivity. Upon release, they tire easily in flight and, if the usual hazards like power lines and other predators don't get them, they eventually starve to death, because they're in no shape to compete for food. "The main argument against rehabilitation," says Brooks, "is that it uses money that should be put into establishing and maintaining habitats."

Thinking in Darwinian terms of natural selection, zookeeper Ernie Rose adds, "Nature's born losers die because they're weaker. By saving them, we may be putting animals back into the breeding population that are basically unfit."

Redig takes great exception to the notion that the injured raptors are Darwinian losers. "Being hit by cars or flying into power lines isn't a natural event." He's willing to concede that the number of raptors released by rehabbers back to the wild each year "is probably not significant in terms of population dynamics." However, he cautions, "the press of the human population expands the hazards and keeps mortality at high enough rates to affect raptor populations. Rehabbers are necessary in order to keep people aware that we need to contain ourselves."

Steve Layman, a long-time falconer and advisor to Redig on captive feeding techniques, is more optimistic and actually believes that raptors may be more adaptable to our presence than we give them credit for. Noting that the human population has reached six billion, he says that wildlife will always live in the direct proximity of people in the future. Therefore, "we must find balanced ways to interact with nature." To illustrate what he has in mind, he offers the example of his bantam hens. Layman, who lives on an island in the Puget Sound surrounded by rural acreage, observed that he had been losing 80 percent of his 200 hens to coyotes and Red-tailed Hawks each year. Over a period of 12 years, however, he noticed that a surviving breeding stock of 30 to 40 hens had become savvy. "They knew somehow to avoid coyotes and raptors but remained unafraid of pet dogs. They survived." He concludes that raptors are adapting to the human environment. "The falcons downtown," he observes, "learn to avoid windows."

Layman is referring to the Peregrine Falcons that use artificial nest ledges placed atop urban skyscrapers. Of the currently estimated 1,650 breeding pairs of American Peregrine Falcons in North America, more than a few are enjoying a free lunch of city pigeons and starlings. In Seattle, a pair has been nesting on the Washington Mutual Towers since 1994. The average survival rate of the chicks, one in four, is consistent with survival rates in the wild. The Bald Eagle, likewise, seems to be adapting to humans in some areas. Many of the estimated 5,748 breeding pairs are nesting in well-populated areas. King County, a densely packed area around Seattle with a population of three million people, has 32 resident Bald Eagles.

A pragmatist with a handle on real-world concerns, Layman has two recommendations for the future. Anticipating Brooks's first objection, that standard rehabilitation sends weakened birds back into the wild, he suggests that all raptor centers adopt falconry techniques. He describes his own process. "I put a falconry hood on the bird's head immediately, which keeps it calm. I put jesses (leather straps) on its legs, tie the bird to a perch using a leash and swivel, and leave it hooded instead of putting it in a cage." A falconer, he explains, uses a lure (a weighted leather pouch with meat attached, swung at the end of a line) to exercise the birds, which are allowed to fly unfettered, instead of being confined in flight cages. This overcomes the problem of flabby muscle tone that develops among birds in captivity. "Some animal rights advocates say it's not right," muses Layman. "They claim this is too much human interference. What they don't understand is that this actually reduces the stress on the birds."

To answer Brooks's second objection, that releasing birds into saturated territories is counterproductive, Layman has a plan. "We should be planting hedgerows," he says. His goal is to create new habitat in areas settled by humans. Anticipating the outcry from landowners who worry that they'll face restrictions on how their land can be used if raptors nest on their property, Layman explains the advantages of his plan. Surrounding a large, untended backyard—or a semi-rural meadow or field—with a hedgerow creates enough plant diversity to support mice, rabbits, and small birds: enticing food for raptors. He suggests planting, for example, wild roses, hawthorn, or snowberry. The hedges themselves will not grow tall enough to kill plants with shade or be used by raptors for nest sites.

"Educating the public, especially the decision makers," adds Redig, is the most important thing rehabbers are accomplishing. A survey he conducted estimates that in 1992 as many

A Great Horned Owl slams into a barbed wire fence, getting hopelessly entangled in the sharp metal barbs (facing page). What should be done with it? Should it be left alone, euthanized, or rehabilitated at a raptor center (above)?

Come spring, when the deep snows of the northern forest recede, the Boreal Owl will be released and perhaps will return there to breed. Will it make it this time? No one can say for sure. But to Pat Redig and other raptor rehabilitation advocates the public education alone provided by rehab centers makes them worthwhile.

DAVID STIMAC

as seven million people in the United States and Canada had some contact with rehab centers. Each month, OWL brings 3,000 schoolchildren face to face with Great Horned Owls, Red-tailed Hawks, American Kestrels, and other fascinating raptors. The California Raptor Center's intensive weekend education program has been attended by nearly 70,000 people since 1980. This outreach alone, in Redig's view, is enough to justify continuing to rehabilitate raptors.

"I'd like to see more centers doing necropsies," says Shelnutt. SERRC is involved in a 10-year study that has biologists screening the gonads and livers of dead raptors for toxic pesticides—particularly organochlorides, which break down into hormonal mimics and result in defeminized females and feminized males. The effects are being seen in amphibians, such as salamanders and frogs. Researchers fear that raptors will eat the birds and rodents that feed on the amphibians and may be rendered unable to breed. But this is only one study. According to Shelnutt, until we do more research on raptors to find out precisely how we're contaminating their environment, we will never understand the degree to which we're ruining our own.

"The preservation of wildlife," warns Redig, "is very much in the hands of humans." And humans seem to need occasional reminders of the larger picture. Our long-range goal, Shelnutt feels, and Layman would agree, should be to do whatever we can to promote biodiversity. "The more pieces in the puzzle," says Shelnutt, "the harder it is for us to disturb it." What the future seems to call for is balance: a better balancing of the needs of wildlife on the decline and the pressures of humans on the increase. It seems doable. Bill Burnham of The Peregrine Fund assures us that most species are plastic, that is, adaptable to some changes in their habitat. "Because of that," he says, "I see a bright future for raptors."

Back at OWL the Boreal Owl has recovered. X-rays revealed no broken bones. Exposed to fresh air and given room to fly, its appetite returned. Once the swelling in its left shoulder went down, the bird regained the feisty attitude Bev Day likes to see and began to spread its wings and swoop after live prey. As soon as the deep snow covering the far northern forests has receded, the owl will return to look for a mate.

For most rehabbers, the Boreal Owl's release will be a triumph. But other people—those who doubt it will live long—might argue that the owl has been mishandled. Still others would claim that to survive these birds will need to learn to avoid windows. Perhaps this release will have no meaning for anyone but the bird itself. Yet if, as Emerson suggests, the way a society values nature may be a measure of how it values itself, then the Boreal Owl's saga, whichever way it turns out, will be in no small way a triumph for us all. ■

Scott Driscoll is an award-winning writer of magazine articles, essays, and short stories. He teaches fiction at the University of Washington Extension.

The Birds of North America

"The definitive biographical resource in North American ornithology for a century to come."—*Living Bird*, Spring 1998

Purchase your charter copy of *The Birds of North America* now and save more than $1,000 off the list price. Buy the entire 18-volume set (more than 700 species accounts) for one payment of $2,275 or three annual installments of $875 each. Please add $225 for shipping and handling.

Don't miss this special opportunity. Order your copy today.

The Birds of North America, P.O. Box 1897, Lawrence, Kansas 66044
(800) 627-0629, extension 224; e-mail: <abonds@allenpress.com>; website: <www.birdsofna.org>.

Going Birding?

Be sure you have the books, optics, and birding gear that will make your trip a success. ***The Birder's Catalog*** is a goldmine of birding products and resources.

*Call for a free **Birder's Catalog** today!*

ABA Sales

Specializing in books, optics, and accessories for birders.

PO Box 6599, Colorado Springs, CO 80934
Phone: 800/533-2473
Website: www.americanbirding.org/adcornell.htm

Birding Optics
•
Field Apparel
•
Essentials

www.upstart-crow.com
888-597-9794

BINOCULARS AND SPOTTING SCOPES

EAGLE OPTICS *RAPTORS* - BINOCULARS FOR BIRDERS

Phase-Corrected Prisms
Waterproof/Fogproof
Rubber Armored
Exceptionally Lightweight
Fully Multi-coated Lenses
Extremely Close Focusing
Long Eye Relief
Twist-Up Eyecups
Lifetime Warranty
backed by Leica USA
Customer Friendly Prices

Currently available in
8 X 32 and 10 X 42!

Authorized U.S. Dealer for:
Leica, Swarovski, Zeiss, Swift, Nikon, Celestron, Bausch & Lomb, Kowa, Questar, Tele Vue, Pentax, Canon, Meade, Steiner, Leupold, Bushnell, Minox, Burris, Fujinon, Eagle Optics, Bogen, Gitzo, Brunton, ITT

Get the best information, advice *and* value from Birders who know: Birds, Birders, Birding and Birding Equipment. We've built a nation-wide reputation on offering birders the best in selection, service and prices on quality optic products. Let our courteous and knowledgeable sales staff gladly assist you in selecting from our complete and extensive inventory.

EAGLE OPTICS
FREE 48 page Optic Buying Guide & Discount Price List
☎ ***(800) 289-1132***
Comprehensive Online Buying Guide
www.eagleoptics.com
2120 W. Greenview Dr. #4 * Middleton, WI 53562

CORNELL LAB of ORNITHOLOGY
Project FeederWatch Sponsor

THE AMERICAN BIRDING ASSOCIATION
PO Box 6599
Colorado Springs, CO 80934
phone: 800/850-2473 or fax: 719/578-1480
E-mail: member@aba.org
Web Site: www.americanbirding.org

Join the American Birding Association — the only North American association for field birders. Get involved with bird education, conservation projects and

- Stay in touch with the latest issues in birding through **Birding** magazine and **Winging It** newsletter.
- Find all of the books, optics, and accessories you need in **The Birder's Catalog**.
- Make contact with local birders as you travel using our **Birder's Resource Guide**.
- Join us at birding **conferences** and **conventions**.

"The best value in birding today!"

Looking for a great bird slide?

SHORT-BILLED DOWITCHER BY TIM GALLAGHER

The Cornell Lab of Ornithology has a vast collection of excellent bird slides, available individually or in specially priced sets. Use our slides to fill gaps in your own slide shows or purchase complete sets, some of which include written scripts or taped narrations and bird sounds. Photographs are also available for commercial use. Write today for our free catalog or visit our web site at <http://birds.cornell.edu>.

CORNELL LAB OF ORNITHOLOGY
159 Sapsucker Woods Road, Ithaca, New York 14850
Phone: (607) 254–BIRD e-mail: <birdslides@cornell.edu>

Gyrfalcon

by Emma Ford

London: John Murray Ltd, 1999; ISBN: 0-7195-5514-0

Gyrfalcons are remarkable birds. Anyone who's seen one in action will attest to that. In level flying speed and endurance no other raptor comes close—not even the exalted Peregrine Falcon, which usually must dive from great heights to overtake and catch or knock down its prey. But a Gyrfalcon can launch itself powerfully from near ground level and chase its prey for several miles if necessary. I once saw a female Gyrfalcon take off from a low perch and catch a drake Canvasback after a nearly two-mile-long, low-level chase—something no other falcon I can think of could do. And, if they feel so inclined, Gyrfalcons can also make peregrine-like vertical dives on prey from hundreds of feet in the air.

So, I'll admit it. I'm definitely an admirer of the Gyrfalcon. I've watched these amazing birds hunt in the northern United States and Canada; I've climbed to their lofty nest cliffs in Greenland and Iceland. I'm probably guilty of having a positive bias toward a book about this species. That said, Emma Ford's new book, *Gyrfalcon*, is a great read, full of fascinating information as well as some of the best illustrations I've ever seen of these legendary Arctic raptors.

In some ways, it's difficult to categorize this book. It's not a scientific monograph of the species, though it contains excellent natural history information and a chapter by Cornell researcher and Peregrine Fund founder Tom Cade on the unique adaptations of the Gyrfalcon for life in the frozen north. It's not a history of Gyrfalcon art, though it discusses the work (and provides some reproductions of the

ANDREW ELLIS

Birders have always relied on field marks.

RED DOTS

tend to be the favorite.

Red Dots are being spotted with increasing frequency. Why? Look past the specs and technical jargon. Experience Leica's legendary edge-to-edge clarity, contrast and brightness. The rugged construction. Built upon 150 years of excellence, Leica birding optics include binoculars focusing as close as 8 1/2 ft. Look for Red Dots at dealers everywhere. For one near you call toll-free or visit our website. Leica. The Optical Advantage.

Leica LEICA

1-800-222-0118 www.leica-camera.com/usa ©1999 Leica Camera Inc.

paintings) of numerous artists who created illustrations of this species during the past 1,000 years. And it's not about falconry, although this ancient sport figures prominently in several chapters. I would call *Gyrfalcon* an appreciation of this remarkable species and a cultural history of its centuries-long relationship with humans.

The artwork alone in *Gyrfalcon* is spectacular. Many of the paintings are newly commissioned works, done specifically for the book by Antony Rhodes and Andrew Ellis—two young and extremely talented British wildlife artists. Other illustrations by contemporary artists include several fine paintings and sketches by Lars Jonsson and one stunning nest portrait by Hans J. Peeters. In addition, the book has reproductions of some early works, such as a 13th-century Chinese illustration of a Gyrfalcon diving at a swan; a 16th-century Hans Holbein portrait of Henry VIII's falconer holding a trained Gyrfalcon; numerous paintings and sketches by master bird artist George Lodge, who painted from the late 19th century through the mid-20th century; and works by several other notable bird artists, including Louis Agassiz Fuertes. The book also has many excellent photographs.

The reproduction quality is magnificent. The vivid colors and the quality of the paper and ink are something rarely seen in books anymore. *Gyrfalcon* was produced by John Murray Ltd., a fine old British publishing house—the same one that published Lord Byron's poetry and Charles Darwin's writings in the 19th century—so perhaps the quality shouldn't be too surprising. I find myself going back to the book again and again, just to gaze at the rich illustrations. I only wish they were available as prints, so I could hang a couple in my office.

Author Emma Ford has done an exhaustive search of the popular, historic, and scientific literature about Gyrfalcons, going back 1,000 years or more. And she has dug up some interesting anecdotes about the bird and its lengthy relationship with humans. The bird was treasured by emperors, kings, and noblemen for centuries as a falconry bird. Ford relates one interesting story about the crusader, King Phillip Augustus of France, who lost a white Gyrfalcon during the siege of Acre in Syria in 1104. The bird flew over the city walls, then was captured and given to Saladin, the great Syrian leader. Desperate to get the bird back, King Philip sent numerous envoys to Saladin and even offered a ransom of 1,000 gold ducats. Saladin spurned all the offers and kept the Gyrfalcon. Another anecdote, again showing the remarkable value of these birds to Medieval rulers, tells of Jean de Nevers, the future Duke of Burgundy, who was captured by the Turks in 1396. No matter how much gold and jewelry he offered as a ransom, the Turkish Sultan, Bayezit I, refused to release

ANDREW ELLIS

ANTONY RHODES

him—until he offered to give him 12 white Gyrfalcons. He was released at once.

I've always enjoyed reading historical accounts like these, and this book is full of them. It also has excerpts from several works, both ancient and modern, about journeys to find Gyrfalcons or treatises on their training and care.

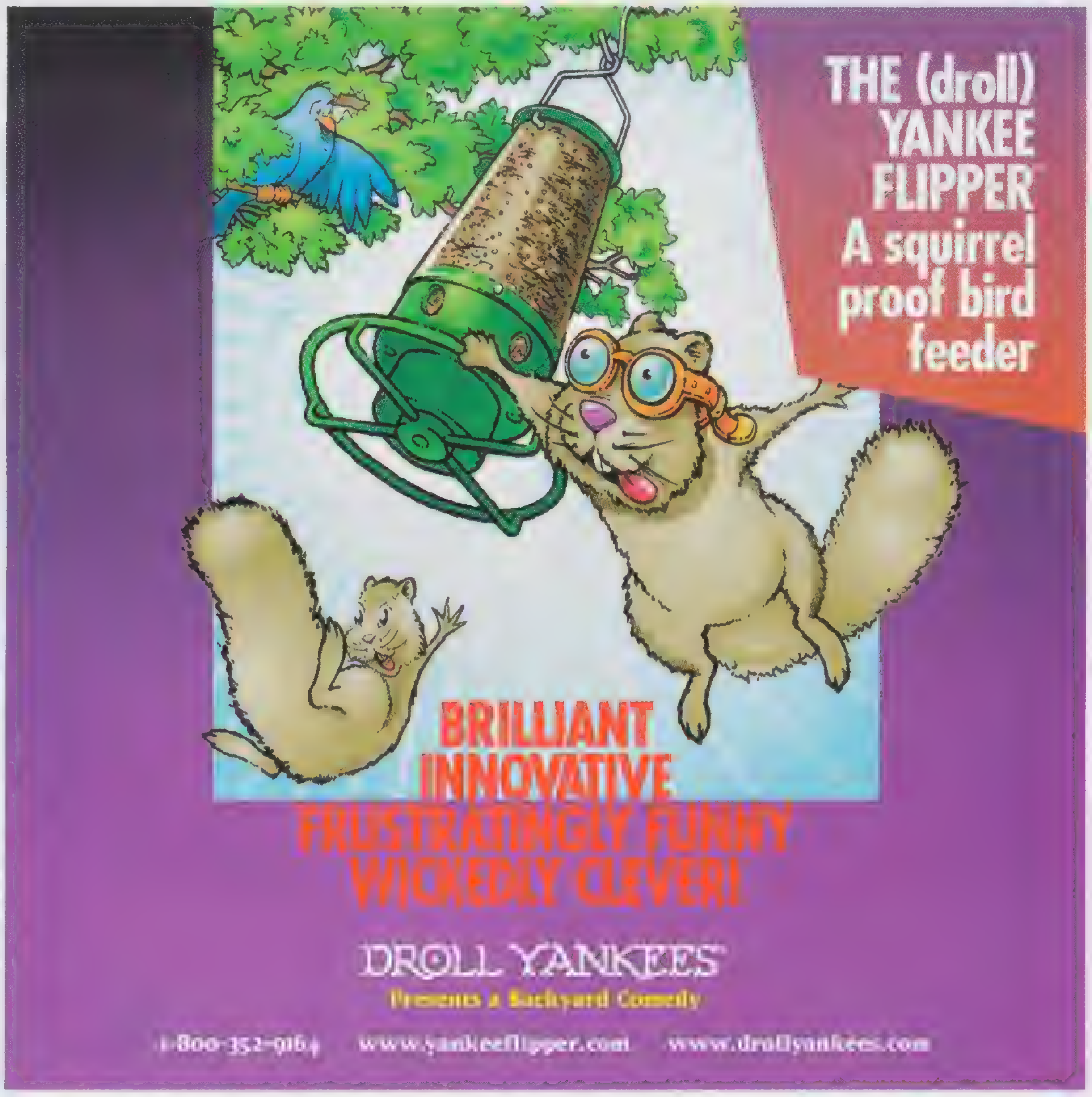
The heart of the book, from a scientific standpoint, is certainly the chapter by Tom Cade: "The Gyrfalcon's Adaptations for Survival in Arctic Regions." He provides insightful theories on how these birds can exist in one of the most inhospitable regions on earth, where icy storms can blow in and last for days (even in summer), making it impossible to fly, much less hunt. How can they possibly survive? According to Cade, Gyrfalcons seek shelter from storms in rock cavities, cliffs, or sometimes even on the ground, where they can reduce their heat loss. "Under such circumstances it may sleep for long periods in a lethargic state, possibly with slightly lowered body temperature and reduced metabolism, thereby conserving its energy stores for later activity when conditions moderate," writes Cade. I've never heard or read about Gyrfalcons going into a semitorpid state like this, but it makes sense. Cade also explains how the great size and weight of a Gyrfalcon help it to retain heat in a frigid environment.

Another "guest" author, Robert B. Berry, wrote a chapter about breeding Gyrfalcons in captivity and another about the birds' current use in falconry in North America. Some readers may be surprised to learn that although Gyrfalcons have been trained by humans for centuries, it was only in 1974 that the birds produced young for the first time in captivity. (This was accomplished by Tom Cade at Cornell's "Hawk Barn," which still stands in Sapsucker Woods, about 100 yards from the Lab of Ornithology.) Berry provides insights on hunting with Gyrfalcons, based on a lifetime of experience with these and other raptors.

My only complaint about this book is that I wish it had more text. It was a quick read, taking only a single afternoon to go through. And the fragments of the earlier books it contains—such as the quotes from Ernest Vesey's 1938 classic, *In Search of the Gyrfalcon*—made me want to reread the originals. Still, this book is a must-have for anyone who's interested in Gyrfalcons.

Gyrfalcon is available in the United States for $95 plus $5 shipping from Olde World Imports, 3400 South 2700 East, Salt Lake City, Utah 84109; (801) 580-1972.

—*Tim Gallagher*



Swift ULTRA LITES® are ultra bright to bring out the finest details on each bird, every time.

The high resolving power in each Ultra Lite means that the smallest detail is always crisp, clear and bright. The fully coated lenses are color corrected to capture all the subtle colors and at only 21 ounces you can carry these glasses all day long without fatigue.

"Ounce for utilitarian ounce, penny for performance-minded penny, you cannot buy a better binocular"

PETE DUNNE - ORIGINATOR
WORLD SERIES OF BIRDING

SWIFT INSTRUMENTS, INC.

Swift Instruments supports INTERNATIONAL MIGRATORY BIRD DAY

952 Dorchester Avenue, Boston, MA 02125 • Ph. 617-436-2960 • Web: www.swift-optics.com
In Canada: Vision Canada LTD, Pickering, Ontario L1W 3S1 • Ph. 905-420-8219

RED-NECKED GREBES BY TIM GALLAGHER

The Sapsucker Woods Society

You can turn a simple plan for your future into an investment for the birds. A planned gift in the form of a bequest or life income agreement is an ideal way to plan for your future, to retain real benefits for yourself, and to enhance the Lab of Ornithology's efforts in bird research and conservation. Lab friends who take advantage of this special investment opportunity will become charter members of the exclusive Sapsucker Woods Society.

For more details, contact Scott Sutcliffe, associate director, Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Phone: (607) 254-2424; e-mail: <sas10@cornell.edu>.

Cornell Lab of Ornithology
Visit our web site at <http://birds.cornell.edu>

The Catbird Seat

THE ONE-STOP BIRD SHOP

by Pete Dunne

It wasn't until I put my luggage in the trunk of the rental car that I realized I'd left my field guide at home. Thinking quickly (because I was wasting valuable birding time), I went to the nearest phone booth. Leafing through the yellow pages, I found a listing under "B" for "Birds, Birds, Birds."

"Everything," the ad promised, "for the bird enthusiast." It was only five minutes away.

"Can I help you?" a cherubic young lad asked from behind the counter.

"Yes," I said. "I'd like to buy a field guide."

"A what?" he replied.

"A field guide?" I repeated.

"A person?" he asked.

"A book," I said to uncomprehending eyes. "A field guide to birds."

"Never heard of it," he said.

"Not *it*. Them," I explained. "There are dozens of field guides on the market."

"Okay," he said. "I never heard of *them*. What do you use them for?"

"THEY HELP YOU IDENTIFY THE BIRDS YOU SEE, YOU DOLT!" I shouted.

"Never seen anything like that," he said. "Are you sure you're in the right place?"

"This is a store that caters to people who like birds, right?"

"Right."

"But you don't sell field guides?"

"Nope."

"Can I see the manager?" I asked.

"Field guide," she said, savoring the term and favoring me with a smile. "Maybe if you explain to me what it's used for."

"It helps you identify the birds you see," I said.

"Identifies them as birds?" she asked.

"Identifies them to species," I said.

"Oh," she said. "We don't have anything like that."

"This is a bird store?" I said.

"This is a bird store," she affirmed.

"But you don't sell field guides?"

"We don't sell field guides."

"Then what do you sell?" I asked.

"Everything to do with birds," she said with a sweep of her hand. "Decorative plates of birds, coaster sets with birds, bird lawn ornaments, bird door knockers, bird lamp shades, bird playing cards, bird calendars. Everything for the person who loves birds."

"But nothing that helps you to identify them?"

"They have feathers," she explained.

"I know they have feathers," I said.

"That's how you know they're birds," she said, brusquely.

"Look," I said, "I'm a birder. I'm visiting the area for the first time, and I'm not familiar with many of the species you have here. I'm looking for *something* that will help me put names to the birds I see."

"Oh," she chirped. "I have something that might work." She walked toward a display and picked up a dishtowel boasting an assortment of British finches.

"The names are printed right next to them," she noted.

"Does it come in any color but yellow?" I inquired.

"Egg yolk," she corrected. "No, it doesn't."

"I don't think so," I said.

"It's on sale," she confided.

"It's not what I want," I said. "And I'd look pretty ridiculous walking around High Island with a dish towel in my back pocket. What I need is a bird book."

"A bird book!" she said, walking toward another display. She handed me a massive tome entitled *Bird Masterpieces*. In it was a collection of the world's most famous paintings with birds dubbed in. Birds sitting around at the Last Supper . . . birds melting off tables . . . "The Mona Limpkin."

"No field guides," I said, beginning to understand.

"No field guides," she agreed.

"Because this is a *bird* store," I said.

"Because this is a *bird* store," she confirmed, obviously pleased that I was finally getting the point.

"I see. Well, can you think of anyplace that might sell me a book like the one I described?"

"You might try a garden center," she said. "They sell bird feeders and birdhouses there."

"Or a food store," the young employee suggested. "They have a book section."

"Thank you," I said. "I'll try them. Say, you wouldn't happen to have a universal rain guard in stock would you?"

"A what?" they said in unison.

"A rain guard for my binoculars."

"This is a bird store," they said.

"Oh, right. What was I thinking?" ■

ILLUSTRATION BY JEFF SIPPLE

EL class

The Ultimate Birding Glass…
No Compromises

New "E L Class" birding binoculars represent a radical breakthrough in premium optical technology from Swarovski Optik. In optical performance …wide field of view with great depth of focus, weight–27.5oz, close focus–6ft, and a narrow tube "Grip-ability" for hand comfort, perfection was achieved. No compromises were allowed in the E L Class design* or manufacture.

Available in 8.5 X 42 and 10 X 42 specifications, the new EL's have rugged, light weight magnesium alloy housings, and an entirely new optical system delivering extreme image sharpness and brilliant, neutral color transmission.

There are no other birding binoculars on the planet as good as the new EL's from Swarovski. See what no compromising means for your birding. Call 800-426-3089 or visit www.swarovskioptik.com for more information.

SWAROVSKI
OPTIK

Swarovski Optik North America, Ltd., 2 Slater Road, Cranston, RI 02920

*patent applied for

LIVING BIRD

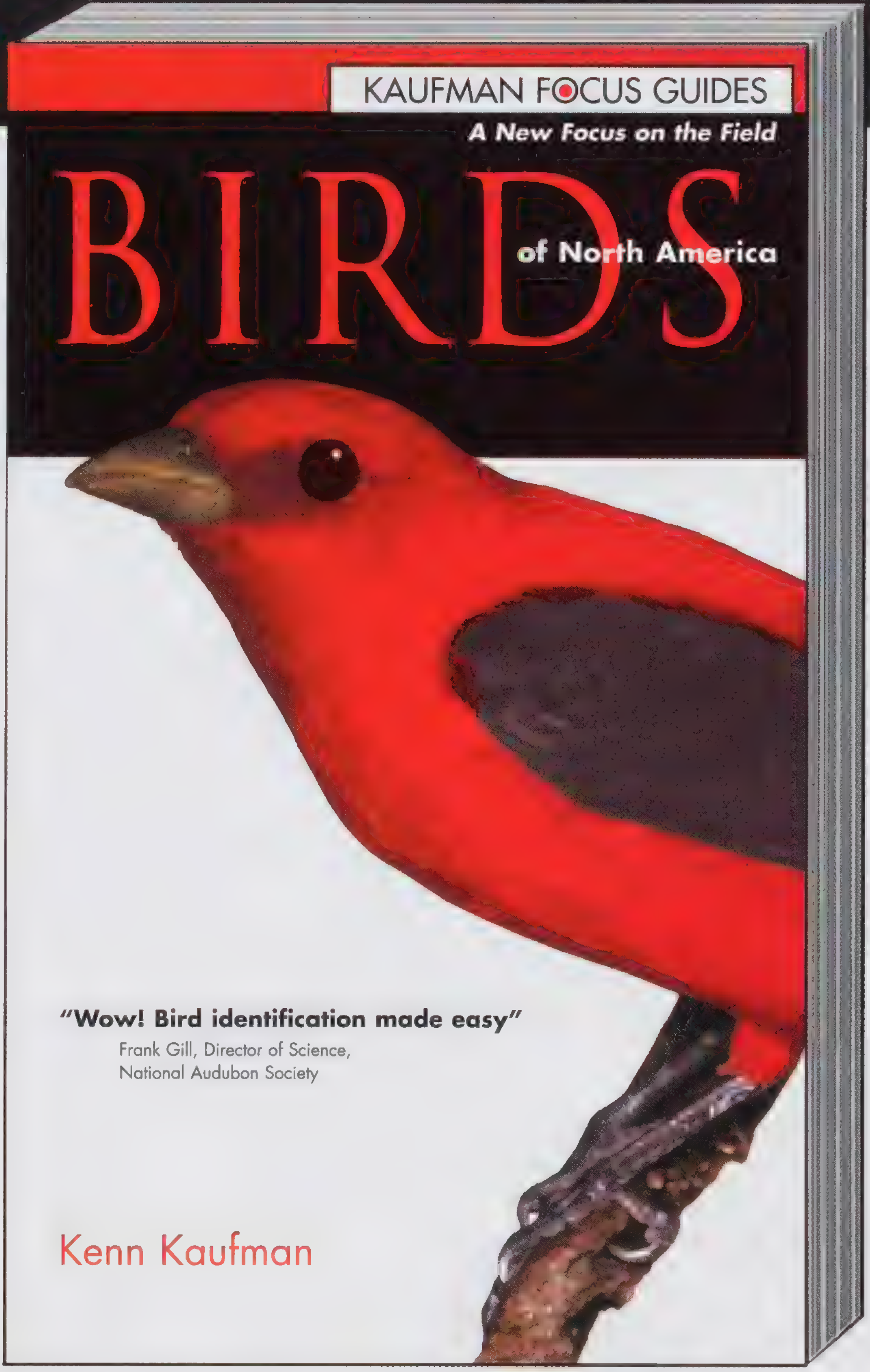
For the Study and Conservation of Birds

AUTUMN 2000

STATE KAUFMAN FOCUS GUIDES

OF THE ART

BIRDING



KAUFMAN FOCUS GUIDES

A New Focus on the Field

BIRDS

of North America

"Wow! Bird identification made easy"

Frank Gill, Director of Science,
National Audubon Society

Kenn Kaufman

Legendary birding expert Kenn Kaufman combines the best features of photographs and paintings in his new, back-to-basics guide for the serious and casual birder alike. Digitally enhanced photographs, maps, and descriptions for each bird appear on facing pages, giving you all the information you need at a glance.

Advanced birders will appreciate the thorough detail, and the casual birder will welcome the simple clarity of this new guide to America's #1 hobby.

HOUGHTON MIFFLIN COMPANY

www.houghtonmifflinbooks.com

AT BOOKSTORES EVERYWHERE

A Publication of the
Cornell Laboratory of Ornithology

LIVING BIRD

AUTUMN 2000 VOLUME 19 NUMBER 4

10 **A PERFECT SEABIRD**
Text and photographs by Kevin Schafer
One man's photographic odyssey in search of penguins.

20 **THE BELL OF THE RAINFOREST** *by Don Stap*
Exploring the mystery of the Three-wattled Bellbirds' song variations.

26 **BONE BREAKERS** *by Antoni Margalida*
Lammergeiers are famous for dropping bones from high in the air to break them into bite-sized pieces, but did you know they also color their feathers?

32 **PARTNERS IN PRESERVING THE LAND**
by Kristi G. Streiffert
Individuals, organizations, and even large corporations are providing vital habitat for birds and other wildlife.

38 **THE WILD ALBATROSS CHASE** *by Clay Sutton*
Searching for the bird of the century in New Jersey.

Departments

4 **LETTERS**

5 **BIRDNEWS**

Columns

6 **SPOTLIGHT** *by David S. Wilcove*
Hidden in plain sight.

43 **PICTURE PERFECT** *by Tim Gallagher*
Blending into the background.

46 **THE CATBIRD SEAT** *by Pete Dunne*
Rain man.

GREETINGS FROM SAPSUCKER WOODS

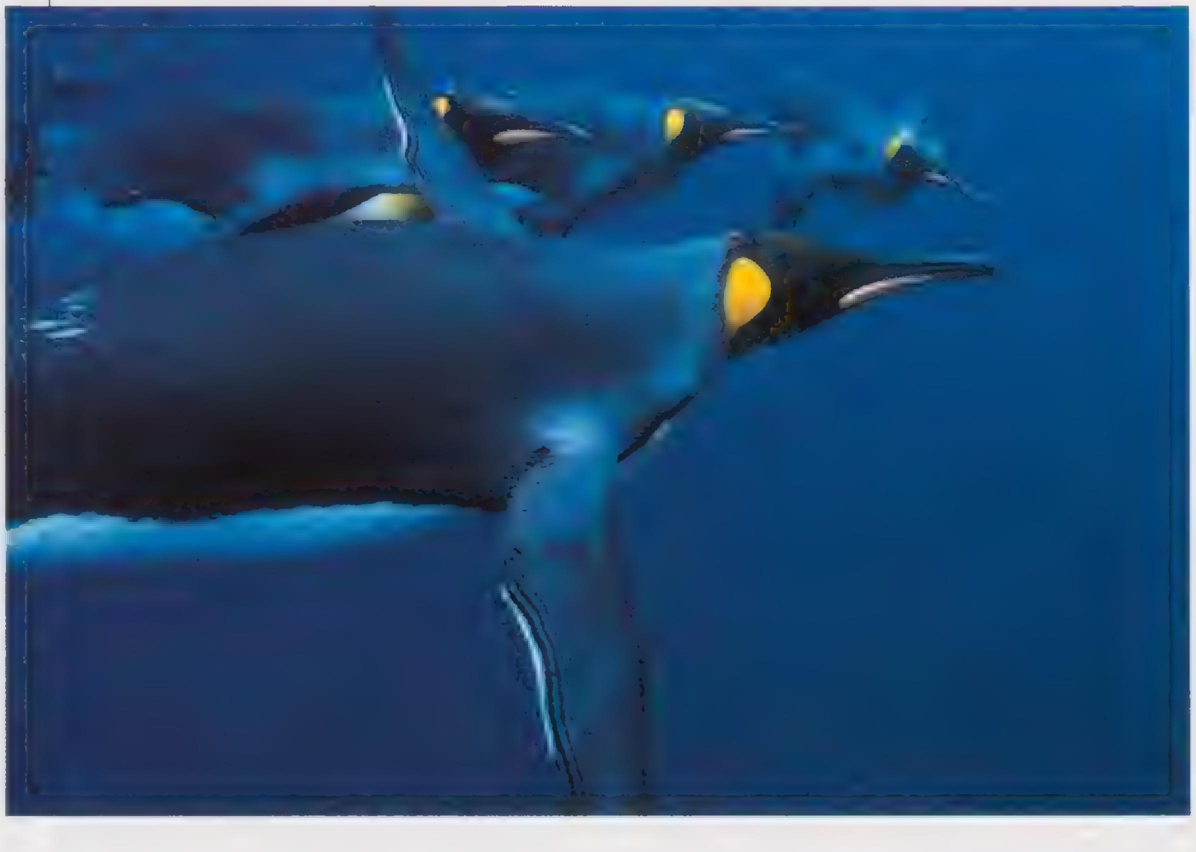
In my years as a bird magazine editor, I've seen a lot of pictures of penguins—the typical shots showing vast hordes of them surrounding crimson-parka-clad tourists; intimate portraits of the birds with young; and distant groups massed on frigid blue-white icebergs. I thought I'd seen them all.

And then I opened the box of pictures from Kevin Schafer and was astounded. He had recently completed work on a book called *Penguin Planet*, which documented his efforts to photograph all 17 species of penguins, and he had numerous pictures of these birds in places we rarely associate with penguins—a beach in South Africa; a New Zealand rainforest. But most remarkable of all were his images of King Penguins in their element, "flying" through their vast underwater realm. To get these shots (like the one below), Kevin had to hold his camera underwater over the side of a rubber boat and snap away madly until the frigid water robbed him of all function in his hands. Going over the side in a dry suit was not an option. The penguins would have fled immediately, thinking he was a predator.

Originally trained as a biologist, Kevin has traveled to all seven continents documenting wildlife, conservation, and ecotourism issues with a camera as well as a pen. He has worked for the World Wildlife Fund for the past three years, photographing endangered ecosystems in Madagascar, Brazil, the Andes, the Bering Sea, and other far-flung locations. We're pleased to present a portfolio of his penguin images on page 10 of this issue.

Tim Gallagher
Editor-in-Chief

Cover: The Curve-billed Thrasher is a common resident of the canyons and semiarid brushlands over large areas of the Southwest and Mexico. Photographer John Cancalosi—whose work is featured in the article on page 26—took this attractive close-up portrait in South Texas.



Right: Seeing penguins swimming underwater is a revelation. Though they seem awkward and funny on land, beneath the sea these King Penguins are elegant and streamlined—masters of their element. To see more of Kevin Schafer's striking penguin images, turn to page 10.

Back cover: One of North America's most widespread woodpecker species, the tiny Downy Woodpecker is a popular backyard feeder visitor. Photograph by John Ingram.

LIVING BIRD

AUTUMN 2000 VOLUME 19 NUMBER 4

Editorial Staff

Editor-in-Chief: Tim Gallagher
Design Director: Kat Dalton
Associate Editor: Leslie Intemann
Technical Editors: Kevin J. McGowan
Kenneth V. Rosenberg
Publications Assistant: Patty Porupski
Contributing Editors: Jack Connor
Pete Dunne
Mel White
David S. Wilcove
Advertising Manager: Barbara Guttridge

Administrative Staff

Louis Agassiz Fuertes Director
John W. Fitzpatrick

Associate Director
Scott Sutcliffe

Director, Education/Citizen Science
Richard E. Bonney, Jr.

Director, Library of Natural Sounds
Jack W. Bradbury

Director, Bioacoustics Research Program
Christopher W. Clark

Director, Bird Population Studies
André A. Dhondt

Director, Conservation Science
John W. Fitzpatrick

Director, Publications
Tim Gallagher

Director, BirdSource
Steve Kelling

Curator, Systematics & Collections
Kevin J. McGowan

Director, Operations
Carol Pyhtila

Director, Communications & Outreach
Allison Childs Wells

Administrative Board

Edwin H. Morgens, Chair
Ellen G. Adelson
Kraig Adler (ex officio)
E. Edward Bruce
Peter J. Bruns
Thomas E. Donnelley II
Theodore L. Eliot, Jr.
H. Laurence Fuller
Mary P. Hines
Ronald R. Hoy
Samuel C. Johnson
Mary Johnston
Austin H. Kiplinger
Randolph S. Little
Linda R. Macaulay
David E. McGiffert
Francis P. Pandolfi
Wendy J. Paulson
Olin Sewall Pettingill, Jr.
Elizabeth T. Rawlings
Frank H. T. Rhodes
Edward W. Rose III
Robert F. Schumann
Carol U. Sisler
Stanley A. Temple
Charles E. Treman, Jr.
Joseph H. Williams
David W. Winkler

Living Bird, ISSN 1059-521-X, is published in January, April, July, and October by the Cornell Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Telephone: (607) 254-BIRD. *Living Bird* is free to members of the Laboratory, a nonprofit, membership organization. Our mission: "To interpret and conserve the earth's biological diversity through research, education, and citizen science focused on birds." For more information please write to our Membership Department. Membership is $35 a year. The Laboratory assumes no responsibility for unsolicited photographs or manuscripts.

Copyright 2000 Cornell Laboratory of Ornithology.

Visit our web site at <http://birds.cornell.edu>.
Printing by Brodock Press, Utica, New York.
Printed on recycled paper.

Letters

HEAVENLY MUSIC

I was so delighted to read Mel White's "Remembrance of Bird Songs Past" (Summer 2000). His favorite, the Wood Thrush, is also mine. Woody is unobtrusive, but he says, "Hello, I'm here, I just thought you'd like to know." The tennis courts where I play are surrounded by woods on three sides, and from May through July we are softly sung to in the purest notes I have ever heard and in softly lilting phrases. This is probably as close as I'll ever get to heaven.

Leon L. North, M.D.
Bryn Mawr, Pennsylvania

SPACE DEFENDER

I enjoyed Mel White's article about memory and birdsong (Summer 2000). However, I must take exception to a passing comment he made regarding the exploration of outer space—"an infinitely sterile and boring place," as he put it. I am a birder and a stargazer. I find the beauty and diversity of both worlds entrancing. There are many others like me, I'm sure, whose binoculars and scopes serve dual purposes. If no other discoveries from astronomy are "interesting and valuable," these are: the impact of comet Shoemaker-Levy into Jupiter showed in the best possible way how tenuous *all* life is on Earth. And even should there not be a rock with our name on it, we ultimately must leave this cradle, anyway, and sooner than we thought. Even though it has been understood for awhile that the Earth has another 5 billion years before the sun destroys it in becoming a red giant, recent studies reported in the January issue of *Astronomy* magazine indicate that the sun's output will steadily increase, heating Earth and making it effectively uninhabitable for most species, including our own, in as little as 500 million years.

The exploration of space has informed our knowledge about the origin of all life on Earth and will ultimately tell us whether we have a viable future. The evolution of the human mind and the abundance (or scarcity) of so-called "boring" ice in space are perhaps the most important determining factors for whether humanity, let alone any other species, will be able to survive beyond the death of our precious planet. I, for one, hope that we and the birdsong we so love will not become a forgotten memory of our solar system.

Rebecca Carroll
Concord, California

STOP COMPLAINING

I read the article "Is Raptor Rehabilitation a Waste of Time?" (Summer 2000), and I don't see why there should be a problem. Most raptor rehabilitation is done by volunteers who spend their own time and money or money specifically donated to their cause. I know one wildlife rehabber who spends nearly all of her waking hours and all of her money caring for wildlife. It's nobody else's business whether raptor rehabilitators are putting their time and money to the best possible use or not. If the people who think these efforts are wasted were to spend as much of their own time and money rehabilitating habitat as wildlife rehabbers do in helping injured wildlife, the world would be a better place—and they wouldn't have time to complain.

Brian M. Godfrey
Neahkahnie, Oregon

We welcome letters from readers. Write to The Editors, *Living Bird,* 159 Sapsucker Woods Road, Ithaca, New York 14850, or send e-mail to <livingbird@cornell.edu>.

Deadly Runoff

According to a recent Colorado study, cadmium leaching from abandoned mines in the Rocky Mountains is becoming a serious threat to White-tailed Ptarmigan and other wildlife. The study, which was reported this past summer in the journal *Nature* (Vol. 408, No. 6792: 181-183) in an article titled "Cadmium Toxicity Among Wildlife in the Colorado Rocky Mountains," showed that ptarmigans and other foragers are accumulating toxic levels of this deadly metal in their bodies.

The authors of the report include James R. Larison of Cornell and Oregon State universities; John W. Fitzpatrick, director of the Cornell Lab of Ornithology; Gene E. Likens, director of the Institute of Ecosystem Studies in Millbrook, New York, and an adjunct professor of ecology and evolutionary biology at Cornell; and J.G. Crock, a chemist at the U.S. Geological Survey in Denver, Colorado.

Cadmium is a silver-white metal used in the manufacture of rechargeable batteries and chrome for automobiles and various appliances. More than 100 years of cadmium mining in the Colorado Rockies has left numerous piles of ore tailings at abandoned mines in the area. Rainwater washes through these tailings, creating toxic runoff that is absorbed by plants, which are in turn consumed by wildlife. Willows are particularly effective at absorbing cadmium and concentrating it in their tissues. According to the researchers, cadmium levels in the willow leaves and buds (a favorite food of ptarmigans) are 100 times the levels found in the surrounding soil.

In a sufficiently high dosage, cadmium is immediately deadly, but lower levels of the metal can have a more subtle but equally insidious effect upon wildlife. The cadmium becomes concentrated in the kidney tissue of the ptarmigans and reduces the birds' ability to process calcium. As a result, the cadmium-contaminated birds have bones that are weak and brittle, and they produce abnormally fragile eggs. Female ptarmigans are especially vulnerable to this contamination, because they stay in the mining areas all winter, when willows are their primary food.

"Birds in the winter really get hammered," says Larison. "Their bones fracture easily, so they die at a younger age and they don't have enough calcium to build normal eggshells."

The researchers documented toxic cadmium levels in 44 percent (and kidney damage in 57 percent) of the adult ptarmigans sampled in the study area, whereas ptarmigans outside the mining region had near normal cadmium levels. They estimate that an average ptarmigan can accumulate toxic levels of cadmium after eating cadmium-rich plants for only 600 days.

And ptarmigans are not the only animal at risk. Hawks, Owls, and foxes that prey on ptarmigans are vulnerable, as are other willow foragers, such as moose, deer, elk, rabbits, and beavers.

"Even humans in the region may not be immune to the effects of cadmium," says Larison.

The cadmium study was funded by the National Geographic Society, Colorado Division of Wildlife, American Museum of Natural History, American Ornithologists' Union, Sigma Xi, Cornell University, and the Cornell Laboratory of Ornithology.

LETTING NATURE TAKE ITS COURSE

I was sickened and disgusted by "The View from Sapsucker Woods" (*Birdscope*, Summer 2000). Are you people living in the real world? Our whole environment is being destroyed. Nature is being chopped into pieces. That you would allow these birds to starve to death just goes to show how callous you people really are. Your whole article is one long excuse. The people who allowed this should be fired. For the first time since joining, I am ashamed of being a member of your organization.

Paul Gallant
New York, New York

I appreciate your taking the time to write your passionate letter objecting to my *Birdscope* piece. Certainly, I'm hopeful that the bulk of what we do here will convince you not to be ashamed of being a member. Bird and habitat conservation owe a lot to things we have done, and we couldn't do any of it without the support of our members.

I very much understand that learned people differ in their opinions about rescuing baby birds. Our view is that teaching people how hard it is to raise birds in the wild—including the *fact* that most baby birds die very young—is a higher priority than rescuing the few individuals to whom we have access. Watching nature in action is the purpose of our nest cameras. Sometimes the action is beautiful, but sometimes it reminds us how tough it is out there. This—and not excuses—was the purpose of my article. I knew of course that it could provoke letters like yours.

I do hope you'll forgive us for letting nature take its course as we watch, and that you will continue to support our many, many efforts on behalf of millions of birds and their habitats.

John W. Fitzpatrick
Louis Agassiz Fuertes Director
Cornell Laboratory of Ornithology

Spotlight

HIDDEN IN PLAIN SIGHT

by David S. Wilcove

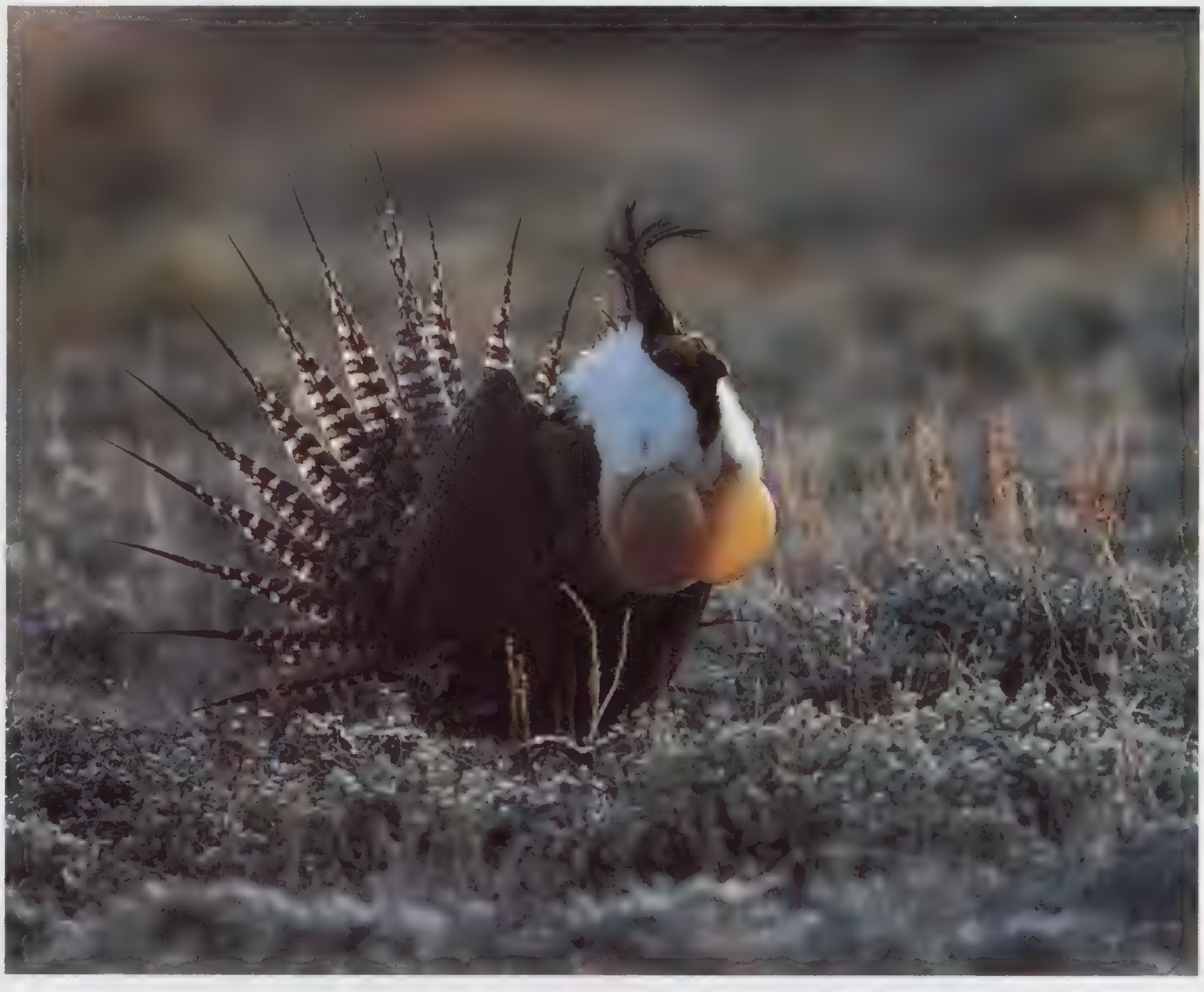
Two previously undiscovered bird species were lurking right under our noses

A few years ago, a clever company began marketing computer-generated 3-D art. Superficially, the posters looked like nothing more than a bunch of blurry red, blue, purple, and green squiggles. But if you stared at them long enough, from the right angle, in the right lighting, some sort of neurological magic happened, and suddenly a 3-D image of a boxing kangaroo, a pirate ship, or a great white shark appeared. Once you "found" the hidden image, it was hard not to see it. But judging from the number of people who stared at the posters, shook their heads, and walked away perplexed, finding the image could be a challenge. Recently, I had the good fortune to see two examples of ornithological 3-D art: a South African lark and a Colorado grouse, both of which escaped detection until recently. Their stories are a useful reminder that, in the realm of natural history, we see only what we're prepared to see.

It was Callan Cohen, a rising star in South African birding and ornithology circles, who introduced me to the lark. Leaving Cape Town on a warm February morning, we drove about 100 kilometers east to an area of dry, stony farmland. Scanning the fields with his telescope, Callan called my attention to several small, grayish-brown birds running along the ground. Periodically, one of them would launch itself into the sky, uttering a loud, descending whistle. Although charming to watch, they didn't seem all that different to me from the 30 or so other larks that inhabit southern Africa, and I did not pay them much attention. Callan, I suspect, sensed my lack of enthusiasm, and he quietly noted that we were looking at the Agulhas Long-billed Lark, the South African bird with the smallest natural range. His message was clear: those little gray larks were a prize sighting, whether I knew it or not.

In my defense, I should point out that none of the current field guides to South African birds singles out the Agulhas Long-billed Lark *(Certhilauda brevirostris)* for special attention. Most don't even mention it, because until very recently, it was considered just one of several races of the widespread Long-billed Lark. Ornithologists had long noticed that different populations of Long-billed Larks varied in the color of their upperparts, the extent of streaking on their underparts, the length of their bills and hind claws, and other features. In the past, as many as four separate species were recognized among these populations, but in recent decades, the consensus among ornithologists has been to consider them all part of one highly variable species. A new study by Peter Ryan and Paulette Bloomer challenges that idea.

Ryan and Bloomer combined stan-


MARC S. DANTZKER

The newest "official" member of North America's avifauna is the Gunnison Sage-Grouse—a bird previously not even recognized as a subspecies of Sage-Grouse.

dard data on variation in plumage, size, and shape with newer data on vocalizations and genetics to re-evaluate the Long-billed Lark. (The genetic data are of particular interest because they provide an independent, quantitative way of assessing how different the various populations really are from each other. To do this, the authors sequenced a portion of one gene to look for consistent differences among the populations.) They concluded that the "Long-billed Lark" actually consists of five distinct species, some with relatively large ranges and others with very small ones. The Agulhas Long-billed Lark turns out to have the smallest range of all, totaling only 15,000 square kilometers (only a portion of which consists of suitable habitat).

If there are multiple species hiding under the name "Long-billed Lark," then South African conservationists have their work cut out for them, because instead of dealing with one widespread species, they must now concern themselves with five, several of which are rather rare. Ryan and Bloomer feel that the Agulhas Long-billed Lark is safe for the time being—the birds, after all, seem to do reasonably well in agricultural landscapes. But they warned that little or none of its habitat falls within the boundaries of any parks or reserves, making the Agulhas Long-billed Lark vulnerable to any changes in land use in its little corner of the world.

Less than a week after leaving South Africa, I found myself in southwestern Colorado, huddled in a car in the cold, predawn darkness, staring intently at a patch of sagebrush. William Merkle and Jim Chace, graduate students at the University of Colorado at Boulder, had taken me to this particular spot to observe the newest member of the American avifauna: the Gunnison Sage-Grouse (*Centrocercus minimus*). Its discovery is even more remarkable than that of the lark and surely ranks as one of the most unexpected developments in American ornithology in more than a century.

Sage-Grouse, of course, have attracted the attention of natural historians, writers, ornithologists, ethologists, wildlife managers, and sportsmen since the early 1800s. Yet despite all this attention, no one was looking or listening closely enough—until the late 1970s, when Clait Braun, then a biologist for the Colorado Division of Wildlife, began noticing that the wings of Sage-Grouse turned in by hunters from the Gunnison Basin were noticeably shorter than the wings of Sage-Grouse shot elsewhere. A few years later, Jessica Young, then an undergraduate at the University of California at San Diego, was studying sounds produced by dancing Sage-Grouse when she received some tapes of birds from the Gunnison Basin. She immediately recognized that something odd was going on. The Sage-Grouse she was accustomed to hearing gave a series of gurgling noises, plus two "pops" produced when the males expelled air from the inflatable sacs located on their breasts. The Gunnison Basin birds, on the other hand, gave nine pops. Here, then, was a population of much smaller birds whose males performed a very different courtship routine from their counterparts elsewhere. Further investigation by Braun, Young, and other scientists uncovered subtle but consistent differences in plumage, as well as significant genetic differences. Added together, these findings led to an inescapable conclusion: the Gunnison Sage-Grouse was a separate species from the other Sage-Grouse living in western North America.

> *If something as big and spectacular as a grouse can hide out in southern Colorado, how many other less conspicuous species await discovery?*

What makes this story so remarkable is that, prior to Braun and Young's research, the Gunnison Sage-Grouse was not even considered a separate subspecies of Sage-Grouse. In other words, it had been completely overlooked, an undiscovered species hiding in plain sight. The last time a completely new bird species had been discovered in the continental United States was almost 120 years ago, when Chester A. Arthur was president.

Unfortunately, there is no guarantee that the Gunnison Sage-Grouse will be with us for much longer. Its population numbers fewer than 5,000 individuals, and it has disappeared from much of its former range. In January, an environmental organization petitioned the U.S. Fish and Wildlife Service to declare the Gunnison Sage-Grouse an endangered species. The Service is now evaluating that request. Had Braun and Young not made their fortuitous discoveries when they did, the Gunnison Sage-Grouse might well have vanished before it could be discovered.

I'm an optimist. I am hopeful that once the word gets out that a new grouse is dancing in the sagebrush country, the rush of bird watchers eager to see it will create an incentive for government agencies and local communities to save the Gunnison Sage-Grouse. But I am also troubled by this thought: if something as big and spectacular as a grouse can hide out in southern Colorado, how many other less conspicuous species await discovery? According to The Nature Conservancy, approximately 200,000 species of all types have been described thus far in the United States. Perhaps as many as 100,000 to 500,000 additional species await discovery in this country alone. As more of our natural areas are consumed by sprawl, intensive agriculture, and other forms of economic development, many of these hidden species are destined to vanish long before anyone takes that closer look. ■

Additional Reading

Luoma, Jon. 2000. "A Bird Gains Species Status After a Life in the Shadows," *The New York Times,* July 4.

Ryan, Peter G., and Paulette Bloomer. 1999. "The Long-billed Lark Complex: A Species Mosaic in Southwestern Africa," *The Auk* 116: 194-208.

The Birds of North America

"The definitive biographical resource in North American ornithology for a century to come."—***Living Bird*, Spring 1998**

Purchase your charter copy of *The Birds of North America* now and save more than $1,000 off the list price. Buy the entire 18-volume set (more than 700 species accounts) for one payment of $2,275 or three annual installments of $875 each. Please add $225 for shipping and handling.

Don't miss this special opportunity. Order your copy today.
The Birds of North America, P.O. Box 1897, Lawrence, Kansas 66044
(800) 627-0629, extension 224; e-mail: <abonds@allenpress.com>; website: <www.birdsofna.org>.

Going Birding?

Be sure you have the books, optics, and birding gear that will make your trip a success. ***The Birder's Catalog*** is a goldmine of birding products and resources.

*Call for a free **Birder's Catalog** today!*

ABA Sales

Specializing in books, optics, and accessories for birders.
PO Box 6599, Colorado Springs, CO 80934
Phone: 800/533-2473
Website: www.americanbirding.org/adcornell.htm

GREAT GIFTS FOR BIRD LOVERS

Beautiful Birds 2001

Bald Eagle 2001

ORDER YOUR 2001 CALENDARS TODAY!

Sales benefit Cornell Laboratory of Ornithology. Call **800-338-2508** or order on-line at **www.tidemarkpress.com**. $11.95 each ... but order two or more and take one dollar off the order.

TIDE-MARK

All wall calendars measure 11 by 14 inches

Hawks on the Wing 2001

Songbirds 2001

The Art of Lars Jonsson

EXHIBITION AND SALE OF WATERCOLORS
by acclaimed wildlife artist
LARS JONSSON
from the
Massachusetts Audubon Society's
centennial book,
The Nature of Massachusetts

October 29, 2000 – February 24, 2001

Massachusetts Audubon Society
Visual Arts Center
963 Washington Street
Canton, Massachusetts

Opening-Night Sale and Reception
Saturday, October 28—5-8 p.m.
$20 per person

For information contact Nora Frank at 781-259-9506 ext. 7502 or
email: norafrank@massaudubon.org
website: www.massaudubon.org

A PERFECT SEABIRD

Text and photographs by Kevin Schafer

One man's photographic odyssey in search of penguins

I met my first penguins on a floating slab of ice, 50 miles from land, in a frigid corner of Antarctica's Ross Sea. It was a brilliant, windless day, the sun's rays surprisingly warm. In the distance loomed the 12,000-foot cone of Mt. Erebus, largest active volcano in Antarctica, a thin wisp of steam trailing from its summit. And standing next to me, immune to the scenery, were no fewer than 50 Emperor Penguins.

It was the middle of my four-month contract as postman, laborer, and tracked-vehicle driver at McMurdo Station, the largest U.S. research station in Antarctica. But since arriving in Antarctica, I had not, until that day, seen a single wild penguin. Growing up on the California coast I had always loved seabirds, and for me penguins seemed the ultimate seabird. The chance to see them was the main reason I had taken this job.

Then one day as we were returning from the field in a helicopter, our pilot spotted the cluster of penguins on the ice and decided to land. Looking at his watch, he told me I had half an hour "to play." Once we had landed, I stumbled outside and suddenly, miraculously, was surrounded by penguins. They stood staring at me, their feathers gleaming in the sun. Some appeared vaguely curious, even a bit puzzled, and leaned toward me, unafraid, for a closer look. Others paid no attention whatsoever, as if tall, red-suited penguins in enormous boots were an everyday occurrence here on the ice.

Here and there, pairs of penguins stood bowing to one another, each bow accompanied by a haunting series of trumpeting calls. Other birds, unmoved by the goings-on, fell asleep standing up. For my part, I was thoroughly enchanted, and it would be no exaggeration to say that this single half hour on the ice changed my life forever. An aspiring photographer, I had a camera with me, but I was so dazzled by these elegant birds that I only snapped a few desultory pictures. And yet the handful of photographs I took that day, 20 years ago, were my first published pictures and launched my career as a wildlife photographer.

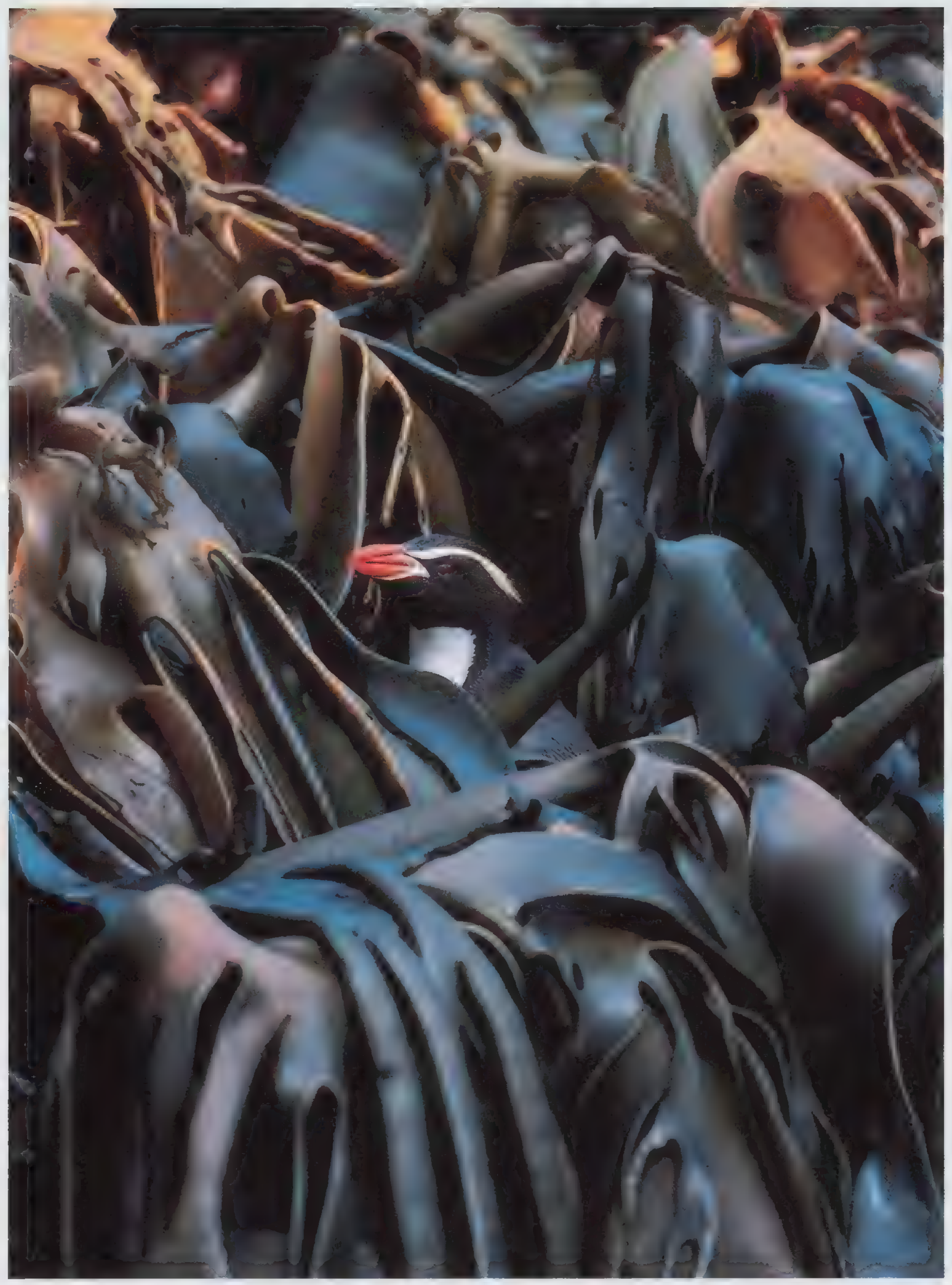
In the years that followed, my work led me to many other places, and into the lives of other animals—and yet I never stopped thinking about penguins. Sweating in the jungles of Brazil and Costa Rica or roaming among the great animal herds of East Africa, I found myself dreaming of distant mountains and endless glaciers . . . of crystalline air and the haunting sounds of those Emperor Penguins on the ice. I wanted desperately to go back.

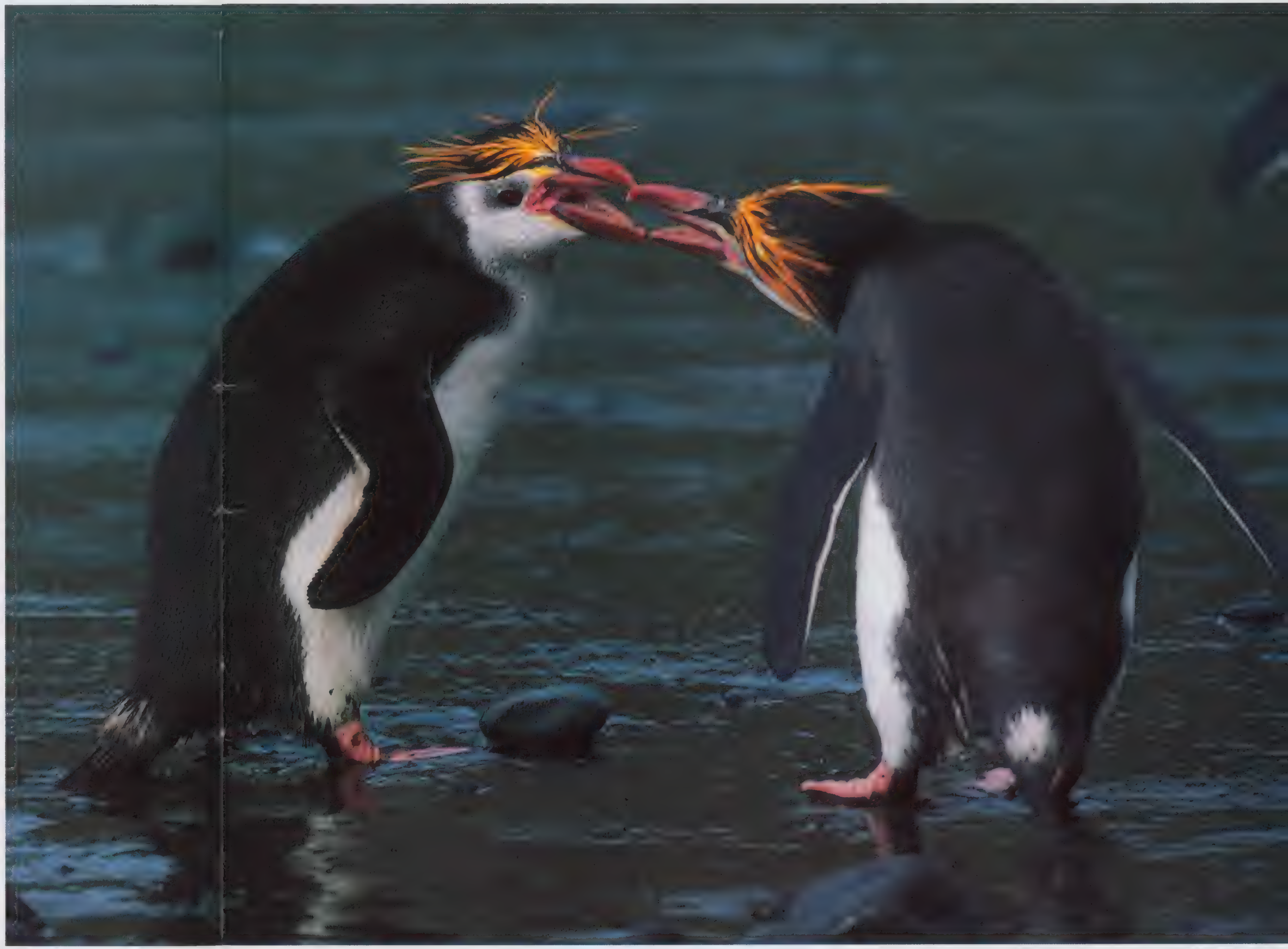
During my travels, I kept stumbling onto other penguins, sometimes in the most unexpected places. I saw them on the desert coastlines of Peru, among the sheep farms of the Falkland Islands, and on the barren lava flows of the Galápagos Islands. I began to appreciate that there are many more kinds of penguins than I had ever imagined and that they live in places vastly different from where I had first encountered them. Far from being exclusively polar birds, it turns out that most penguin species actually live in temperate areas. Some never set foot on ice or snow in their entire lives.

Emperor Penguins (above) may never set foot on dry land in their entire lives: they nest on remote patches of sea ice, often dozens of miles away from open water. To get back and forth, they must either walk or slide on their bellies—a behavior known as tobogganing.

Then one day, an idea occurred to me: why not give in to my passion for penguins? And so I decided to set out to see, and photograph, all of the world's 17 species of penguins in the wild. It was a crazy notion, of course, but I had already seen the Emperor Penguin—one of the most difficult to find—and a few other, out-of-the-way species, so I had a head start. To my knowledge, all 17 species had never been photographed well, in the wild, by a single photographer. This gave me the goal—and the excuse—I needed. The decision made, I pulled out range maps and reference books and began planning my route.

Penguins are surprisingly far-flung birds, breeding on four continents and hundreds of islands around the southern hemisphere. But it wasn't hard to decide where to go first: it had to be New Zealand. Seven penguin species breed there, four of which are endemics, making





The little-known Snares Penguin is found only on the tiny Snares Island group off the southern tip of New Zealand. These rocky islets are surrounded by thick bands of kelp that the birds must go through to get to and from the sea. This hapless Snares Penguin (at left) got stuck somewhere in between and had to wait for a large ocean swell to lift him free. Colonial life is no guarantee of good manners. At all times of the day and night, a penguin colony is filled with the sounds of squabbles and disputes. These two Royal Penguins (at right) on Australia's Macquarie Island may be sparring over a potential mate or a disputed nest site.

New Zealand a kind of penguin Mecca. No other country in the world can claim anything like this level of penguin diversity. Australia, South Africa, and Ecuador each boast only one endemic species—and that's it. It's no wonder many scientists believe that penguins evolved in the seas around New Zealand, probably from Procellariiform ancestors (albatrosses and other tube-noses), some 50 to 60 million years ago, forsaking a life in the air to become the most perfect seabirds that have ever lived.

But New Zealand's diversity of penguins doesn't mean that these birds are easy to find there. Some of them are quite rare, and others can only be found at the hard-to-reach offshore islands of New Zealand's sub-Antarctic. So when I learned that a small cruise ship planned to visit some of these islands, I quickly booked passage.

Southbound from Bluff harbor, our first landfall was Snares Island, 150 miles south of the New Zealand "mainland." This small cluster of islands is home to the Snares Penguin (*Eudyptes robustus*), one of six species of crested penguins, fully half of which are found only in New Zealand.

The Snares Penguin, a bird few people have ever heard of, also illustrates how surprisingly little we know about the natural history of many pelagic seabirds. Although a fair amount of work has been done on the breeding ecology of the Snares Penguin, we still have essentially no idea where the birds go when they leave the island—they simply vanish until the following breeding season.

Because of the sheer density of nesting birds and the danger that visitors might import harmful pests to the island, landing on Snares Island is forbidden. But from a Zodiac, the birds were easy to see, standing all along the island's rocky shoreline. Photography, however, was a challenge, because neither small boats nor penguins tend to hold still. In the end, we managed to spend several hours bobbing in the kelp as a constant stream of penguins marched between their inland colonies and the sea.

A day's journey east took us to the Bounty Islands, home of the Erect-crested Penguin (*Eudyptes sclateri*). Here, we again ventured out in Zodiacs, ignoring the heavy, rolling swell that repeatedly tried to smash us against the rocks. I'd have given anything to step ashore, if only to escape from the lurching boat, but this island is also off limits. I could see why. The Bounties are little more than treeless, fetid slabs of granite, hammered by the sea. Yet even from the heaving surf we could see the sheer abundance of life ashore: tens of thousands of Erect-crested Penguins nesting side-by-side with equal numbers of Salvin's Albatrosses. Hardly a square inch of rock exists there without a bird nesting on it.

Later, we were finally able to land on lonely Macquarie Island, part of Australia's sub-Antarctic territory, a few hundred miles to the southwest. Macquarie is an astonishing place, its beaches packed with King Penguins and wallowing southern elephant seals. But just 100 years ago, the island was a slaughterhouse, famous for the sheer numbers of King Penguins that were killed and boiled down for their oil—

These curious King Penguins surrounded the author while he was in an inflatable boat off Macquarie Island. To photograph them, he had to hold his camera over the side in the chilly water until his hands were too numb to function. If he had entered the water, they would have scattered at once, because people look too similar to leopard seals, the penguins' chief predator. Unlike most penguins, which are intensely social, the Yellow-eyed Penguin (facing page) of New Zealand is a solitary nester. Here one stands guard at its nest crevice on Enderby Island.

as many as 150,000 a year. What brought me to Macquarie was the Royal Penguin (*Eudyptes schlegeli*), a species that breeds nowhere else on Earth. The weather on the island is usually abominable, but we were fortunate to get ashore on a balmy, almost windless day. I spent several delightful hours sitting on the beach, photographing wave after wave of Royal Penguins coming ashore though the crashing surf. I took my most successful pictures, however, just offshore at Lusitania Bay, where some 100,000 pairs of King Penguins jammed the beach so tightly it was impossible to land. But hundreds of curious King Penguins soon surrounded our small boat, circling and diving beneath us and even poking the pontoons with their sharp beaks.

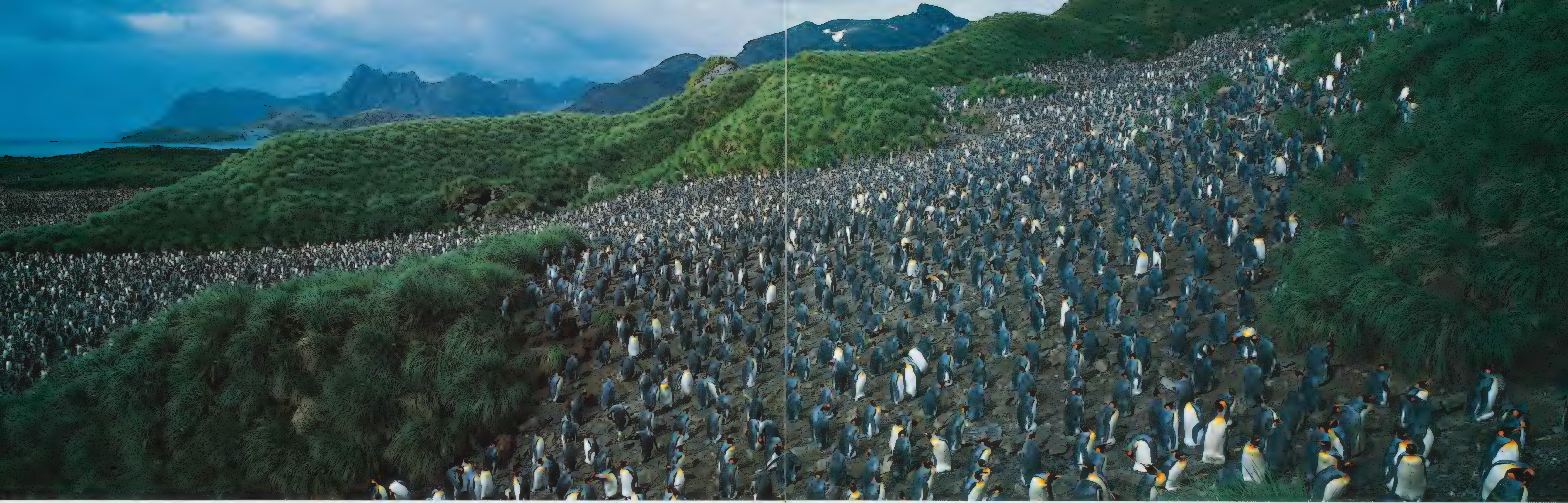
This was the first time I had ever seen how spectacularly beautiful penguins are underwater, their streamlined shapes a study in economy of design. Fortunately, I came prepared with an underwater camera. I gently lowered it over the side into the water and within seconds the penguins came right up to the camera as I snapped feverishly away. I went through only three rolls of film that morning, roughly 100 pictures, before my hands became too cold to function in the frigid water. Without a film processing lab nearby, I had no way of knowing how well my pictures turned out until a month later, when I was back at home. Predictably, most of the pictures showed only empty blue water, with perhaps some barely discernible shapes—a tail, a couple of disembodied heads—visible in the distance. But in three or four frames, I found exactly what I'd hoped for—the graceful shapes of penguins in their natural habitat, gliding effortlessly through the sea with trails of bubbles in their wake. I was thrilled.

From Macquarie, we returned to New Zealand waters again, this time in search of the mysterious Yellow-eyed Penguin (*Megadyptes antipodes*). These New Zealand endemics are unique enough to be the single member of their genus. What makes them different? For one thing, although most penguins are intensely gregarious, gathering in enormous, chaotic breeding colonies, these birds prefer to nest in the forest, often far from their nearest neighbor.

Nowhere is this more striking than on tiny Enderby Island, in the Auckland Island group, where Yellow-eyed Penguins breed in a forested fairyland, shadowed and mossy, filled with the songs of native Red-fronted Parakeets (*Cyanoramphus novaezelandiae*) and New Zealand Bellbirds (*Anthornis melanura*). It was one of the most magical (and unpenguinlike) places I have ever been. Enderby Island has recently been cleared of rats and invasive plants by New Zealand's vigilant Department of Conservation, and, as a result, this penguin species is on the rebound there. Unfortunately, the situation is vastly different on the mainland, where non-native predators and habitat loss have reduced the birds' population by more than 75 percent in the last 40 years.

Tragically, the same problems face New Zealand's other penguins, particularly the Fiordland Penguin (*Eudyptes pachyrhynchus*), another coastal forest nester that is quickly disappearing, largely because its young are preyed upon by introduced nest predators such as rats and stoats. Notoriously hard to find, the birds had finished their breeding season by the time I got to New Zealand, and I was told I would have little chance of seeing one.

Undaunted, my wife Marty and I spent most of one day sitting on a remote beach, plagued by biting sand flies, hoping that we might get lucky. Then, just before dark, I spotted a lone Fiordland Penguin scampering ashore. Excited beyond belief, I could only grab a half-dozen pictures before the bird finished a quick preen

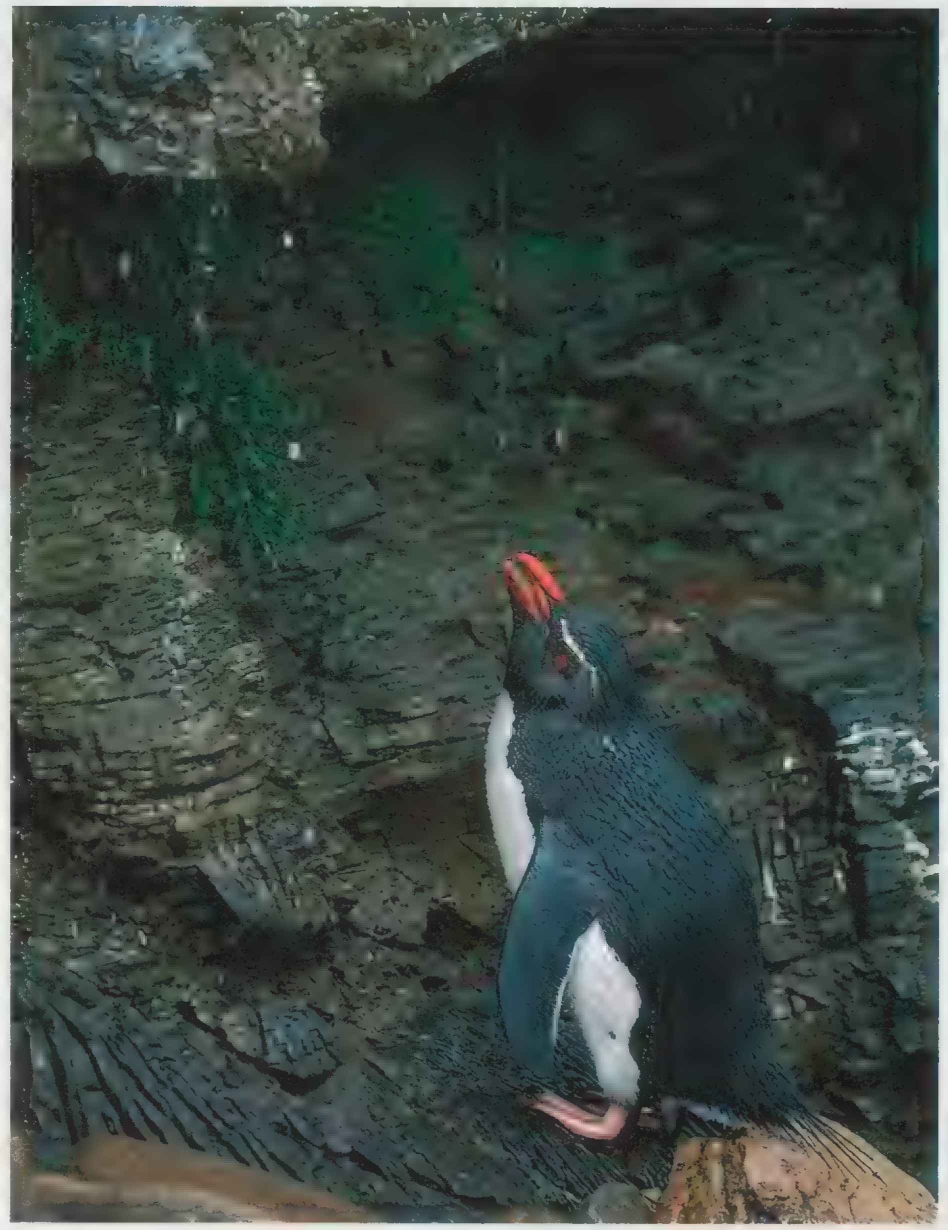


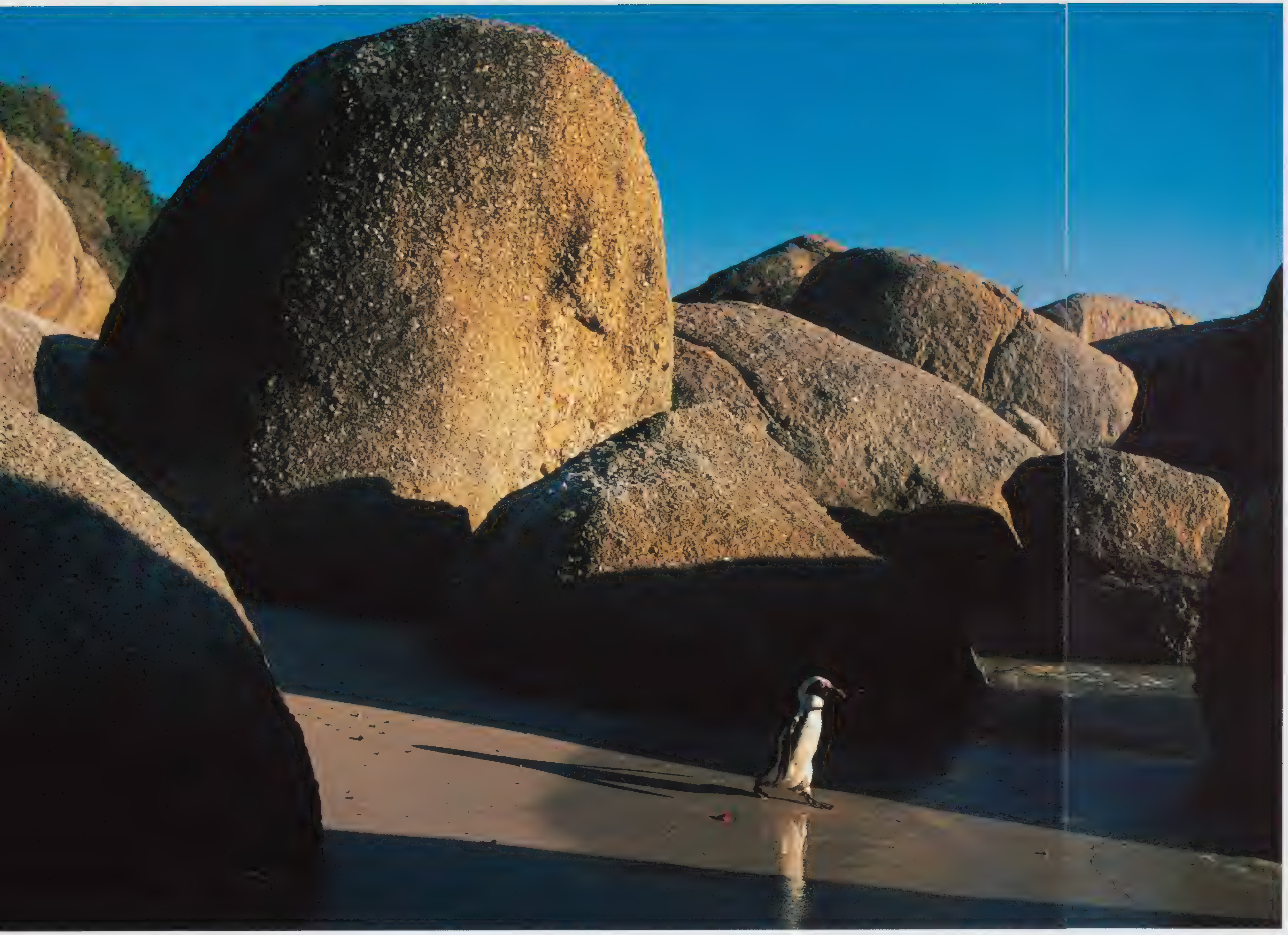
The remote island of South Georgia is home to one of Earth's most stunning gatherings of wildlife. There, on Salisbury Plain (above), tens of thousands of King Penguins nest on the shingly ground. At left, a crowd of Gentoo Penguins surrounded the author at dusk on a lonely beach in the Falkland Islands. Like all seabirds, penguins have salt glands which allow them to drink seawater safely. But this did not stop the Rockhopper Penguin at right from enjoying a rare sip of fresh water at a small waterfall.

and waddled into the forest. As we left the beach in darkness, I was giddy with our good fortune. But my good mood evaporated when we crossed paths with a stoat—the scourge of ground-nesting penguins. That encounter left me despairing for the future of the penguin we had just seen and its entire species.

After New Zealand, there is probably no better place to see penguins than the Falkland Islands, site of the bitter 1982 war between Britain and Argentina. Treeless and pummeled by the wind, the Falklands are something special—imagine Scotland with penguins. And although they cannot boast *any* endemic penguin species, the Falklands do have four regular breeding species in abundance—Gentoo, Rockhopper, King, and Magellanic—along with the occasional Macaroni Penguin.

Marty and I have spent many blissful weeks in the Falklands, surrounded by penguins, having the luxury of time to visit them at all hours of the day and sunlit night. One of my favorite species there is the pint-sized Rockhopper Penguin, a flightless bird that for some reason has chosen to nest atop the highest cliffs. To watch these birds climb the most vertiginous slopes by relentlessly hopping up, inch by inch—in many cases only to be swept away by the next crashing wave—must be one of the most





A lone Jackass Penguin (above) heads out to sea through a jumble of granite boulders near Cape Town, South Africa. These penguins feed in some of the busiest shipping lanes in the world. A recent oil spill affected tens of thousands of them during their breeding season.

entertaining ways to spend time ever devised. Their persistence is humbling.

The Falklands have the largest number of Rockhopper Penguins in the world, and yet, even here, their numbers have lately been crashing. Once-huge colonies are shrinking every year, despite the fact that there is only a modest fishing industry and little pollution. Perhaps the rockhoppers are simply the first penguins to react to the effects of global warming and the accompanying rise in sea temperature. We don't know for sure why yet, but something drastic is clearly happening.

A few hundred miles southeast of the Falklands, the water turns sharply colder along a line known as the Antarctic Convergence, where cold polar currents collide with warmer, northern waters. Here begins the true Antarctic ecosystem. Here, too, is the home of the most enormous gathering of penguins in the world: South Georgia Island. Beneath an awesome backdrop of glacier-covered mountains and broad sweeping valleys, tens of thousands of King Penguins gather in huge, dense colonies, while on the slopes above nest a staggering five million pairs of Macaroni Penguins. Add to this the thousands of albatrosses, petrels, fur seals, and elephant seals, and you have an almost overpowering testimony to the productivity of the Antarctic seas.

Having evolved without land predators, penguins are often merely puzzled, rather than terrified, by the presence of humans. This Jackass Penguin (at right above) turned a quizzical eye toward the author's camera and then promptly fell asleep.

For a photographer, such spectacles are daunting. How can you hope to separate the infinite dramas taking place all around you from the chaos that the sheer numbers produce? I've been to South Georgia Island five times, in both sun and squall, and I still don't feel I've captured its living essence. Like all wild places, it demands time—time to absorb its natural rhythms, time to discover its wild secrets. I will have to go back.

After South Georgia, there was really only one place left on my penguin list. Having already seen the other South American species, the Humboldt and Galápagos penguins, on other trips, my last penguin journey took me in the opposite direction—to Africa, in many ways, the most unexpected penguin place of all. What a surprise to find penguins on the sunburnt tip of Africa, living on the fringes of Cape Town itself.

We found them on a small beach, south of the city, in the middle of a posh residential suburb. Having long associated penguins with wild, remote places, I found the oddest juxtapositions there—such as the local human residents, who complained about being kept awake at night by braying Jackass Penguins nesting under their homes. Or on the beach itself, where penguins often shared the sand with scantily-clad weekend sun worshippers. The birds appeared to be doing well, and it seemed, finally, like I had found a penguin success story. But even there, all is not secure. These penguins live alongside some of the busiest shipping channels in the world, and as recently as this past June a major oil spill affected tens of thousand of birds in the middle of their breeding season. A similar spill happened in the same area only three years earlier. There, as elsewhere, when penguins and humans interact, penguins almost invariably lose.

On my last night at this African beach, my penguin mission complete, I felt the warm, satisfied glow of accomplishment. I had done it! And yet my sense of triumph was already tempered by the realization that many penguins face an uncertain future. The sad fact is that we tend to be complacent about the status of penguins. We imagine them in huge colonies, tucked away safely in isolated parts of the Antarctic and Southern Ocean, far from the impact of human activity. Although this may be true for some species—King Penguins are on the increase worldwide, and Emperor Penguins seem essentially stable—many species of penguins are in desperate trouble. And although no penguin species has as yet gone extinct at the hand of humans, that may well soon change. ■

Kevin Schafer is a freelance photographer and writer whose work has appeared in numerous magazines. His third book, Penguin Planet, *which documents his travels to photograph all 17 penguin species, was published this fall by NorthWord Press. Visit his web site: <www.penguinplanet.com>.*

The Bell of the Rainforest

BY DON STAP
ILLUSTRATIONS BY JOHN SCHMITT

Exploring the mystery of the Three-wattled Bellbirds' amazing song variations

On a warm July morning we drive from San Jose through central Costa Rica for two hours along a winding, narrow highway. The road is crumbling at the edges and pitted with potholes, neither of which discourages the locals from passing two or three cars at a time as they speed around blind curves. It is the final 20 miles of the drive, though, that engage my senses completely. Turning off the highway, we head up into the Tilaran Mountains to Monteverde. In our four-wheel-drive Suzuki Sidekick, we lurch along at a snail's pace for nearly three hours over a roadbed composed of great, jagged chunks of rock. After the first three or four sharp turns—with unobstructed views of the valley below—I am grateful that last night, minutes after we rented the car, we were robbed, which forced us to turn back and get a hotel room, rather than continue on without passports or money and eventually find ourselves on this mountain road in darkness.

But what does this matter? We are entering the kingdom of the Three-wattled Bellbird *(Procnias tricarunculata)*, a peculiar member of the cotinga family named for the wormlike appendages hanging from the base of its bill and for its call—a loud *bonk.* An adult male Three-wattled Bellbird is a singular sight. Its body is a rich, uniform chestnut brown except for the head, neck, and upper chest, which are snowy white, as if the bellbird had been held by its feet and dipped in whitewash. Add to this the three long, black wattles hanging from the bellbird's bill, and the overall effect suggests a creature that was assembled by a bird-maker in an ambivalent mood. What look was he going for—something beautiful or bizarre?

The bird's bells-and-whistles vocalizations are even more captivating than its appearance. Dozens of bellbirds gather at this time of year in two small remnant

Everyone knows that the songs of suboscines, such as the Three-wattled Bellbird (at left), are genetically encoded and should never vary, right? Then why do some bellbirds appear to have regional differences in their songs, and why do some of their songs change over time as they mature?

patches of rainforest on the slopes just below Monteverde, putting on a noisy show more entertaining than a third-grade band. It is just the kind of scene where you might expect to find birdsong expert Don Kroodsma, headphones on, microphone in hand, tape recorder running. But it's raining on my first morning in Monteverde, and Kroodsma, who arrived here two days before me, leaves his equipment in the car and leads me into the rainforest to show me the bellbirds. An associate of the Lab's famed Library of Natural Sounds, Don Kroodsma has been eavesdropping on the love songs and neighborhood quarrels of birds for more than 30 years. He is one of the country's leading authorities on bird vocalizations; and yet he is less interested in what he knows than in what he doesn't know.

Kroodsma thinks he knows why the calls of some bellbirds are unlike all the others; if he's right, the accepted principles of bird vocalization behavior may well be turned upside down.

Even when Kroodsma listens to the birds singing in his own backyard in Amherst, Massachusetts (he is professor of biology at the University of Massachusetts), he hears mysteries. He'd like to know, for instance, what it means when a Black-capped Chickadee that has been singing *fee-bee-ee* for several minutes suddenly sings this simple song at a slightly higher or lower frequency, as chickadees are wont to do. Is there some subtle bit of chickadee irony in this? Such questions keep Kroodsma occupied for years at a time. Today, he is interested in something strange about the bellbirds' calls: they do not all sound alike. General principles of bird vocalization behavior say they should. Kroodsma thinks he knows why the *bonk* calls of some of the bellbirds in the Monteverde area are unlike all the others, and if he's right, it's a remarkable piece of news that will turn those general principles upside down. It's not hard to imagine future ornithologists looking back on this discovery as an important moment in the history of birdsong studies. For Kroodsma, though, there will be no single moment but rather many hours of recording over the next several days, and later at home still more hours analyzing those recordings. And what could be better than that? Kroodsma loves his work. A tall, fit man in his fifties, he has the fair complexion of his Dutch ancestors and an easygoing demeanor that is well suited to waiting for who knows how long for the rain to clear and for a bird to sit in the right spot and begin singing.

This 10-acre island of montane rainforest is surrounded by hundreds of acres of land that was cleared for cattle and crops. Each year after the bellbird's breeding season (March to June), most of the male birds from the Monteverde area show up either here or in a second small forest remnant nearby. They stay for a month or two, then depart, continuing a migration that will take them throughout much of Costa Rica. No one knows for certain why the birds stop in these two particular patches of forest each year, though the fruit-bearing Lauraceae trees that grow here, which provide the bellbird's favorite food, surely have something to do with it. Whatever the reason, it makes this privately owned parcel of rainforest particularly valuable to the future of the bellbird, whose population has been dwindling steadily for decades. It also makes them relatively easy to see and hear, thanks to the property owner, who has given researchers access to study bellbirds.

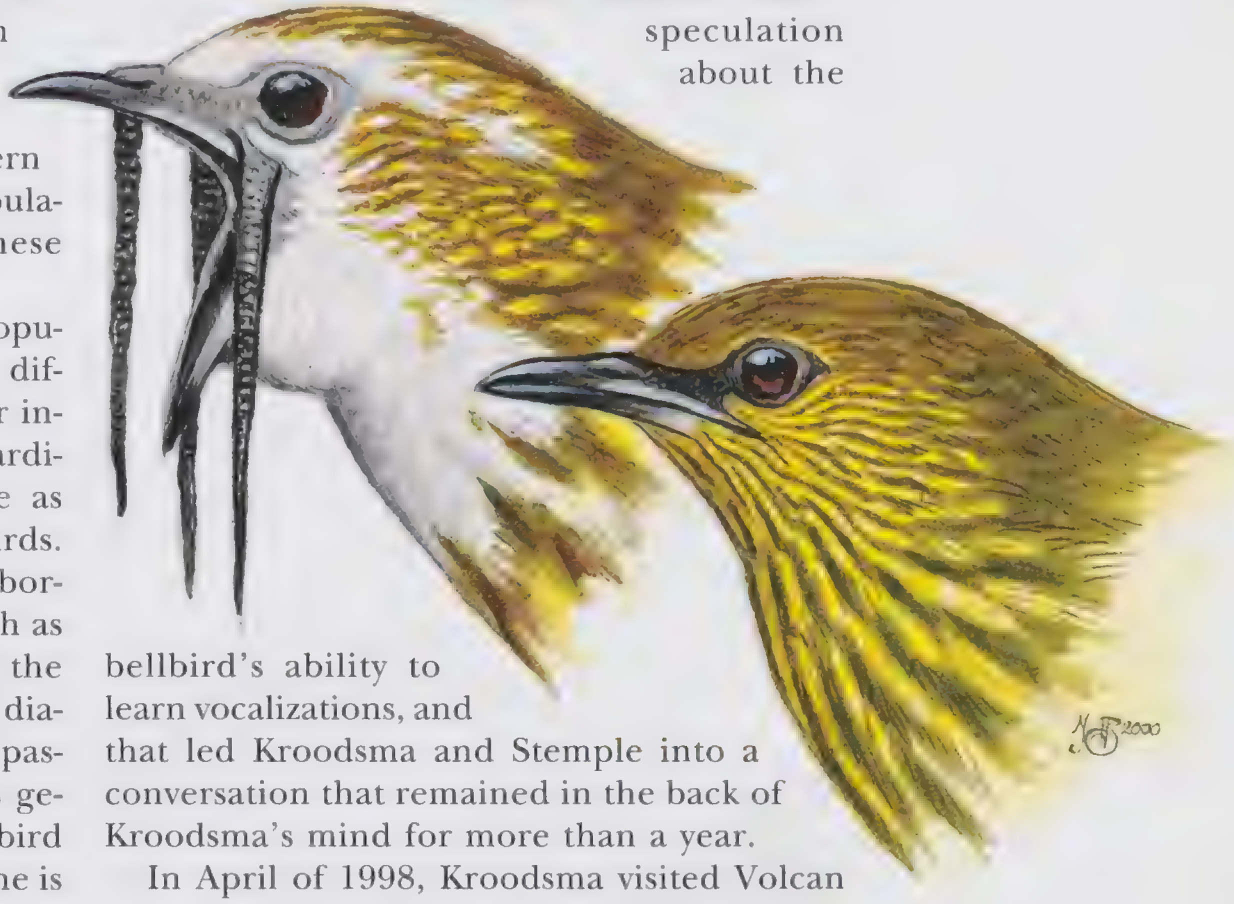
I follow Kroodsma through the forest island. It is so small it takes only a few minutes to walk through. In the field on the other side, holes have been dug to plant, it appears, more citrus trees. Although a patch of blue sky shows in the distance, it is still raining lightly, as it has off and on, Kroodsma says, since he arrived. So far, wind and rain have kept him from doing much recording. Nevertheless, we hear a few bellbirds calling. Nothing seems to stop them; they call all day long, nine months of the year. One beautiful adult male sits exposed on a branch about 60 feet up at the edge of the clearing. The bird's bold two-tone coloration is striking, but it's the bellbird's call that seems to define everything around it. The *bonk* reverberates in the air, and does in fact sound like a bell that has been struck, but perhaps a bell made of mahogany. I've never heard anything like it. One bird calling would be enough to keep me transfixed for some time, but I can hear half a dozen calling from various points in the forest. One *bonk* rings out, then another in the distance, then two more that almost overlap each other—a virtual mountainside of bell towers. This litany of calls, ringing one after the other through the cloud-darkened skies, casts a spell that I think I may never recover from.

For a while this is all I listen to, but then Kroodsma directs my attention to the other elements of the bellbird's vocalizations. The *bonk* call is followed by a series of whistles that remind me of starling vocalizations, and then a soft, barely audible swishing sound that Kroodsma refers to as the "fine structure" of the call. The vocalizations are so different, it is hard to believe they all come from the same bird. Kroodsma, who has been looking at the sky every few minutes (the rain has softened to a light mist), suddenly hears a bellbird *bonk* that sounds odd. "Listen," he says, then points his finger when he hears it again. "That one—hear it?" It is coming from somewhere in the trees, not as loud as the birds nearest us, but it's easy to hear the difference. The *bonk* has a nasal quality. It sounds more like a *quack* than a *bonk*. To make matters more interesting, this quacklike *bonk*, Kroodsma has been told, is what the calls of the Three-wattled Bellbirds found near the Costa Rica–Panama border sound like. The "Panama bellbirds," which breed at the southeastern edge of the bird's range (the Three-wattled Bellbird occurs from southern Nicaragua to western Panama), are the second major local population of the bellbird in addition to these "Monteverde bellbirds."

It's not unusual for two different local populations of the same species to sound a bit different. The songs of Florida cardinals, for instance, differ from those of Michigan cardinals, though both are easily identifiable as cardinal songs. But cardinals are songbirds. Songbirds, or oscines (one of the two suborders of passerines), learn their songs much as children learn to speak, which provides the potential for variation, including regional dialects. Suboscines (the second suborder of passerines) are born with their vocalizations genetically encoded. The Three-wattled Bellbird is a suboscine, not a songbird. If a suboscine is learning its song, this is newsworthy.

Kroodsma was not the first to notice the variant bellbird calls, but he will be the first to follow the story all the way to the end. "The studies done by David and Barbara Snow twenty-five years ago noted that the birds had more than one song," Kroodsma says, "and there was this interesting observation that the vocalizations of young birds seem to change over time, as if the birds were practicing the song and perfecting it, as songbirds do." Barbara Snow, who spent two months at Monteverde in 1974 watching and listening to Three-wattled Bellbirds, noted that one bird sounded unlike any of the others. It was similar, she wrote, "to a recording of the species from . . . Panama." Snow described her observations in detail and suggested that these suboscines might in fact learn their vocalizations. But "without tape recordings," she concluded, "further comparisons [of the two variations of the *bonk* call] are too speculative to be profitable."

More than 20 years later, in 1997, Don Kroodsma and Dave Stemple—a University of Massachusetts colleague and sometime collaborator in birdsong studies—were driving home after a visit to the Library of Natural Sounds (LNS). "Just before we left," Kroodsma says, "we asked [LNS curator] Greg Budney, 'Do you have anything good for us to listen to on the long drive home?' And Greg gave us a tape of Costa Rican birds." Somewhere between Ithaca and Amherst, Kroodsma and Stemple heard the Three-wattled Bellbird on the tape. The loud *bonk* sounded like nothing else on the tape, a call so strange and insistent that it was impossible to ignore. Kroodsma recalled Barbara Snow's speculation about the bellbird's ability to learn vocalizations, and that led Kroodsma and Stemple into a conversation that remained in the back of Kroodsma's mind for more than a year.



A female Three-wattled Bellbird (at right, above) lacks the namesake wattles and sports an olive-green back and a yellow breast, heavily streaked with dark olive-green. An immature male (at left) resembles a female but is larger and usually shows distinct wattles.

In April of 1998, Kroodsma visited Volcan Barva, a volcanic peak in Braulio Carrillo National Park in the central highlands of Costa Rica, hoping to record several particularly interesting Neotropical birds on a wish list he had compiled. "Then we heard a bellbird calling in the distance, and we just sort of dropped everything else," Kroodsma says. "The bellbird is magnetic. Just amazing." Later that day, by sheer coincidence, Kroodsma ran into conservation biologist Debra Hamilton, who was studying the bellbirds. Hamilton told Kroodsma about the different call of the bellbirds in Panama, and Kroodsma suddenly realized that earlier in the day he had been hearing that call also: "I was just dumbstruck. At that moment I knew there were questions to be answered."

Now, the sky is clearing, and the rain has stopped, so Kroodsma has returned to the car to get his equipment. A few moments later he is back in the clearing, aiming his parabolic microphone at a bellbird perched high in a tree 100 feet away. Moments later, a second bellbird lands on the same branch. This is common bellbird behavior at this time of year.

The two birds will jostle for position until one eventually drives the other off. Several minutes pass. We stand quietly. One of the challenges in recording the bellbird's vocalizations is the great range in volume between the loud *bonk* call and the very soft swishing sounds that follow it. "With the older recordings of bellbirds, all you can usually hear is the *bonk* and the loud whistles," Kroodsma says. "The fine structure isn't there." To get them both, Kroodsma is using a stereo DAT recorder. He has one track set for recording the loud *bonk* and the whistles and the other track set for the softer sounds. The drawback is that "the DAT recorder is a power hog," Kroodsma says, pointing to his backpack, which holds two six-inch-long lead acid batteries for the DAT. "I feel like I have a car battery in there."

The calls of the young bellbirds we have been hearing sound incomplete, hoarse, and at times falter in midnote, their voice "cracking" like any adolescent's.

Kroodsma remains motionless, his arm holding the parabolic microphone steady. Next to Kroodsma, Dave Stemple has his tripod-mounted spotting scope trained on the bellbird. When the bird moves to another nearby branch, we move a few steps and angle ourselves toward the bellbird's new position, then freeze in motion again. (After a morning of this, I feel like one of the last pieces left on a life-size chessboard.) As I wait for the bellbird to call, I watch it through my binoculars. The bird opens its beak so wide that the lower mandible nearly touches its chest, a position it holds for a second or two. The muscles on its neck and back contract and swell. Then it lets loose a great *bonk* that can be heard half a mile away, arguably the loudest call in the bird world. Each *bonk* is explosive, as if someone has sneaked up behind the bellbird and squeezed it suddenly. The bird's beak remains wide open as it emits the whistles and fine structure that follow the *bonk.*

Stemple, leaning forward, one eye against the scope, holds his hand in the air, making a puppet of it, as if to cast the shadow of a duck head on some wall only he can see. When the bellbird *bonks,* Stemple opens his hand-beak wide. If a bellbird were able to laugh once in its life, I suspect this might be the moment. This is not vaudeville though; it's science. Stemple's actions let Kroodsma know without any uncertainty which bird on the branch is calling, and Stemple also describes the bird's plumage, an indicator of the bellbird's age. Although Kroodsma has a healthy respect for uncertainty, even takes pleasure in it ("How can we ever know what these birds are saying?"), he is determined to eliminate it in his research. He is meticulous in his methodology. He already has a strong hunch the evidence will show that bellbirds learn their vocalizations, but he will not make the case until he has gathered enough data to make the claim virtually undeniable. Thus, he will not only record bellbirds here this year but return in subsequent years to record as many of the same birds as possible. One thing he suspects is that the bellbird takes as long to learn its vocalizations as some songbirds do. The calls of the young bellbirds we have been hearing sound incomplete, hoarse, and at times they falter in midnote, their voice "cracking" like any adolescent's.

Two hours have gone by, and Kroodsma is still standing in the clearing recording each bellbird that flies in and lands in one of the trees along the edge of the forest. Male bellbirds prefer to call from an exposed limb, usually a broken-off branch, so the margins of this clearing seem to attract them. Sometimes there are actually too many bellbirds. Kroodsma doesn't know where to turn. As long as the weather holds, he will be able to record bellbirds to his heart's content. By tomorrow, when he has once again stood here for several hours lost in the sheer density of bellbird songs, he will be referring to this clearing as "the black hole of bellbirds" and will have to force himself to search for bellbirds in other areas.

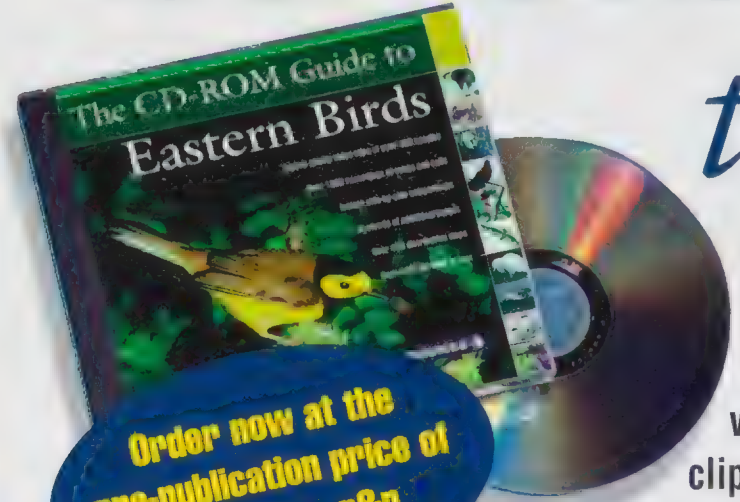
By the time we leave Monteverde, Kroodsma will have 20 hours of tape of bellbirds calling. One of the birds on these tapes sings both the "Panama" and the "Monteverde" dialects—a "hybrid singer." The bird's plumage indicates it is three years old, and Kroodsma wonders if it will eventually choose one call over the other—another question to be answered. The more time Kroodsma spends recording these strange birds, the more intriguing they become. "My hunch is that the bellbirds, and the cotinga family in general, are unique among the suboscines in the way their vocalizations develop," Kroodsma says. "But how many have we studied? How many fingers do you have on one hand?" And this is to say nothing of the tape that was sent to Dave Stemple of a Three-wattled Bellbird from Nicaragua whose call doesn't match either the Panama or the Monteverde birds—a third dialect? Kroodsma has more work to do. ■

Don Stap has written numerous articles for prominent national magazines and is author of A Parrot Without a Name. *He teaches creative writing at the University of Central Florida.*

"I didn't know CD-ROM's could be *this* good"

ABA delegate, Fort Collins, June 2000

See all these birds (and 400 more) come to life on your computer



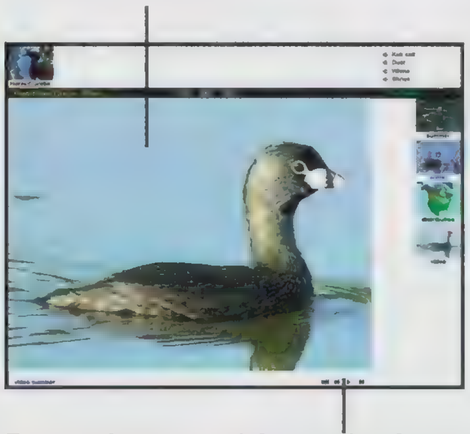
Order now at the pre-publication price of only $55 + p&p

Suitable for most Windows & Apple Mac computers

THE CD-ROM GUIDE TO EASTERN BIRDS
Better than photos, better than paintings, video clips show you what each species really looks like, exactly as you see it in the wild. This is the only CD-ROM that gives you superb quality video clips covering over 400 eastern species. It has comprehensive audio recordings so you can listen to what the birds sound like too. There's no better way to learn how to identify birds.

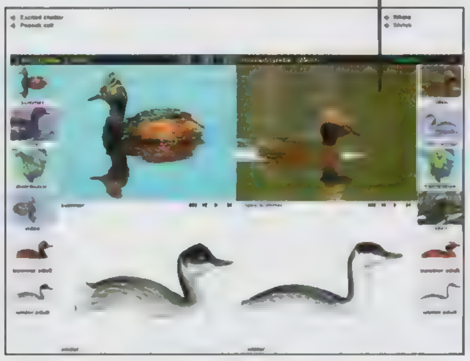
At least one video clip of almost every Eastern American species

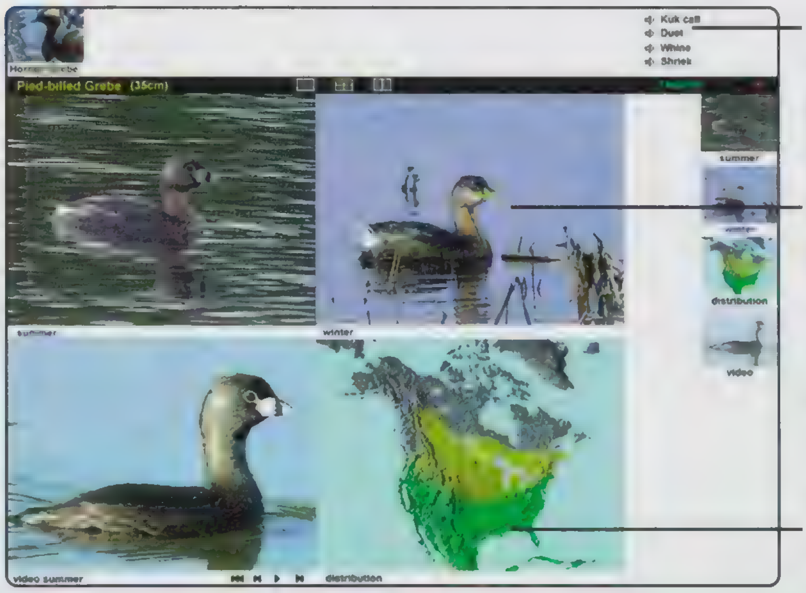
Videos can be viewed in large-screen format



Freeze-frame and frame-by-frame facilities enable you to study each species in detail

Any two video clips can be shown side-by-side for easy comparison of similar species





Sound recordings include more calls and songs per species than any other CD-ROM

Nearly 1000 additional photographic images to show species in different plumages

Thousands of screens of text (not shown here) cover identification and life histories of every species

Distribution maps show where each species can be found

EXTRA FEATURES INCLUDED AT NO EXTRA COST:

BIRDLOG	provides a facility for computerising all your bird sightings
LISTMAKER	enables you to create and maintain any number of different lists
BIRDQUIZ	allows you to test and improve your identification skills
LISTS FROM MAPS	enables you to generate species lists for any part of America

Try before you buy. Test out a sample on our website: www.birdguides.com

ORDER IT NOW - SAVE $10

This amazing new CD-ROM will be launched in November 2000 priced at $65 +p&p. If you order it before the end of October you'll be able to buy it at the **pre-publication price of only $55 + $4 p&p.**

3 ways to order:

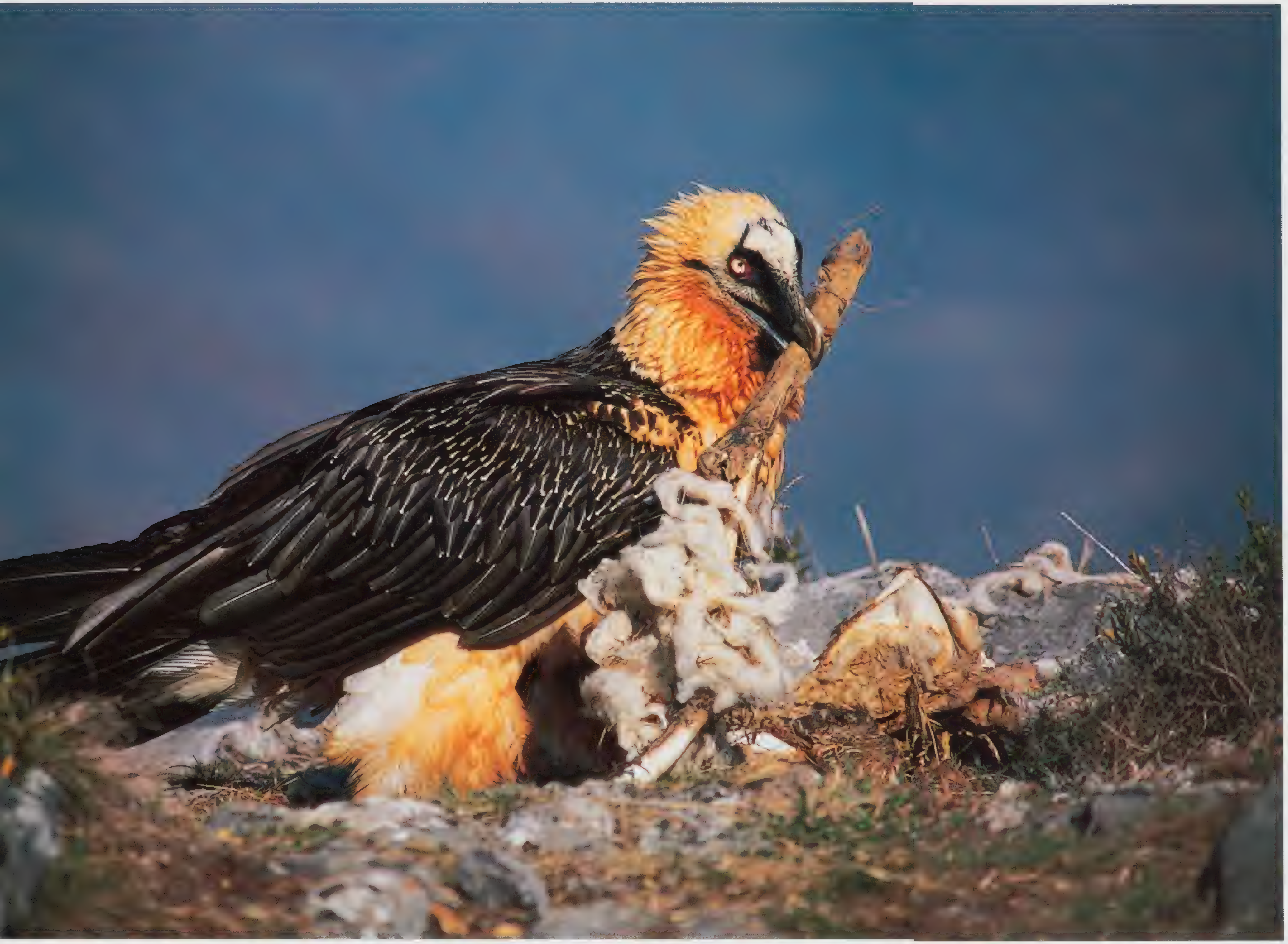
ON-LINE Visit our website **www.birdguides.com** and place an order using our secure on-line shopping facility.

PHONE Call us toll free on **1-800-941-1909**

POST Send credit card details or a check (payable to BirdGuides) to **1137 East Broadway, Cushing, Oklahoma 74023**

MONEY BACK GUARANTEE If you are not entirely satisfied with this, or any other BirdGuides product, we'll provide a full refund, excluding postage.

BIRDGUIDES
www.birdguides.com



Lammergeiers are famous for dropping bones from high in the air to break them into bite-sized pieces, but did you know they also color their feathers?

A Lammergeier or Bearded Vulture (above) tears a bone from the carcass of a dead sheep. The bird will carry the bone hundreds of feet in the air and drop it repeatedly onto the rocks below until it shatters into edible fragments. At right, pieces of bone dropped by these fascinating vultures.

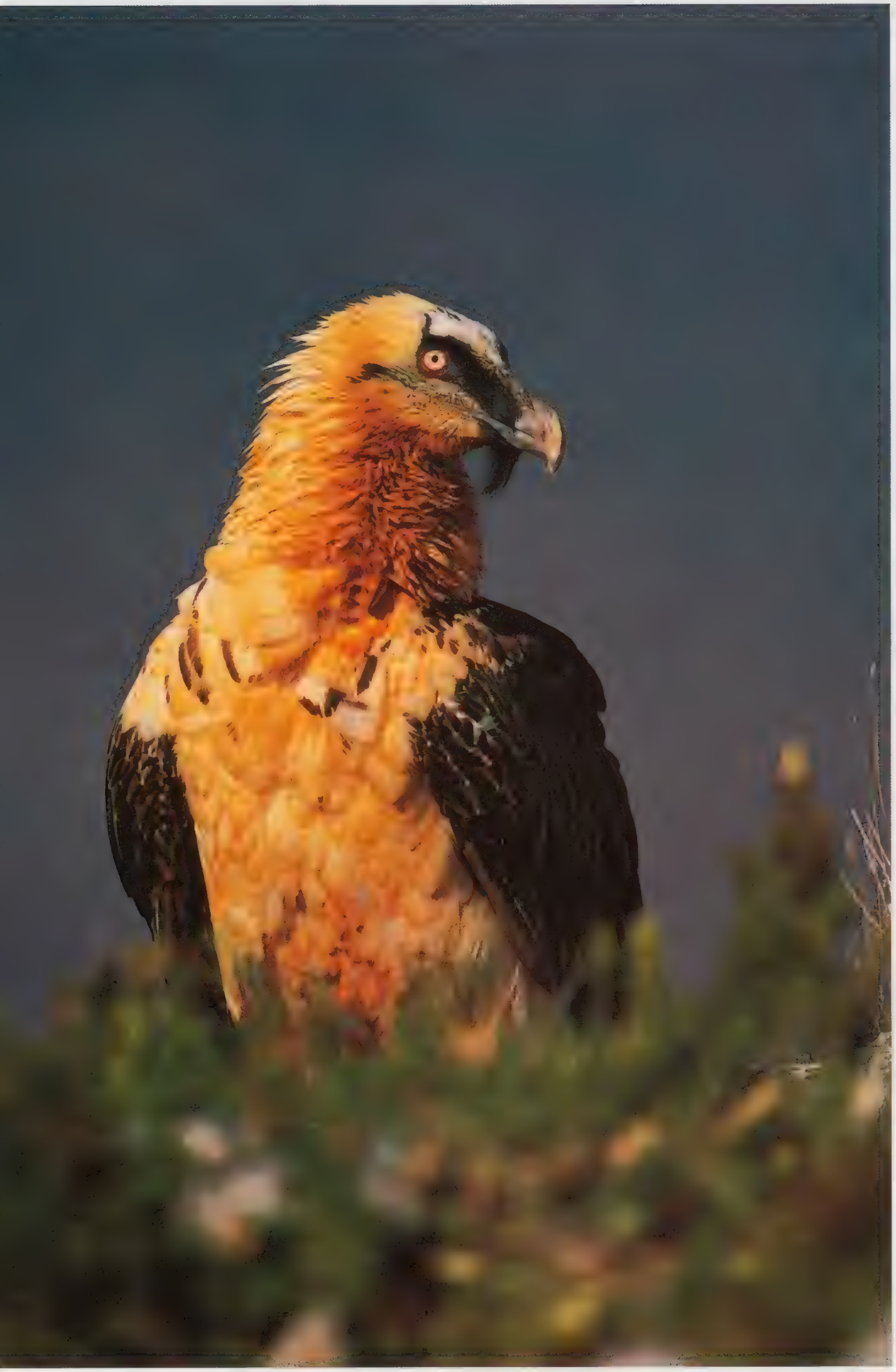
Bone Breakers

BY ANTONI MARGALIDA
PHOTOGRAPHS BY JOHN CANCALOSI

I will never forget the first time I saw a Lammergeier (*Gypaetus barbatus*). I was 13 years old and my brother pointed one out to me, soaring majestically high overhead near our home in Spain. Almost 20 years have passed since that first sighting, and I have watched these strange bone-eating scavengers almost daily ever since. I must confess that each encounter is almost as intense as the first. Something about the Lammergeier seems to captivate everyone who sees it. Its face is covered with a mask, a red orbital ring surrounds each eye, and a peculiar "beard" hangs beneath its bill. Perhaps it is this strange appearance as well as the fact that it is threatened in Europe that have caused me to focus all of my attention on this unique vulture.

Lammergeiers (also called Bearded Vultures) live in the mountainous regions of Europe, Asia, North Africa, and South Africa, nesting in nearly inaccessible high rocky cliffs. I have studied them for the past 10 years

Blank Page Digitally Inserted



This Lammergeier has deep rust stains on its neck and breast, which it deliberately added to its feathers by bathing in iron-oxide-rich water.

in the Pyrenees of northern Spain. Here, the vultures lay their eggs in winter (December and January), and the chicks do not leave the nest until late June or early July. To study these birds effectively and monitor their entire breeding cycle, you must spend nearly the entire year in the mountains, braving frigid winters with temperatures often below freezing and sizzling Spanish summers, when the temperature often tops 90° Fahrenheit. But when I observe these remarkable birds up close, I always forget about the harsh climate, and every trip into the mountains is rewarding.

Two aspects of the Lammergeier's distinctive biology make the species different from all other vultures and, indeed, all other birds. First, it is one of the very few fundamentally osteophagus or bone-eating vertebrates. And second, the Lammergeier uses iron-rich soils to add a rusty coloration cosmetically to its plumage. These two aspects of the birds' behavior probably explain why Lammergeiers received so much attention from naturalists and scientists in the 19th century. Both its bone eating and the origin and function of the orange coloring in the adult birds have caused long-standing scientific debates that continue to this day.

The bird's common name in Spanish, Quebrantahuesos, means "bone breaker," and when I began my studies, I couldn't wait to see this unique behavior. I had read numerous accounts from shepherds and naturalists in the early 1900s, describing how Lammergeiers carry bones more than 300 feet into the air and drop them to the rocks below to break them into small, edible fragments. These stories fired my imagination, and finally, one April day, I saw my first bone-breaking session. A Lammergeier dropped a sheep's vertebral column repeatedly against some slanted slabs of rock on the side of a mountain. The bone-breaking site was located not far from a nest, at an elevation of nearly 5,600 feet. After each drop, the vulture descended rapidly in a corkscrew flight, picked up the remains, and flew back up to throw the bone down again. It repeated this procedure until the sheep's vertebral column shattered on the sixth throw, and the bird ate the "bite-sized" remains without any problems. Two of the bone fragments were about 10 inches long, and the bird swallowed them in a few seconds.

Although bone breaking is spectacular, perhaps more surprising is the fact that these birds bathe in water containing iron oxide to give their plumage a rusty color. The Lammergeier's feathers are actually white; the striking reddish tones on the breast, neck, and head of the birds result entirely from these intentional baths in stained water. Indeed, the reason there are white Lammergeiers in some subpopulations in Corsica, Crete, and even the Pyrenees is that these individuals have had no contact with these cosmetic soils.

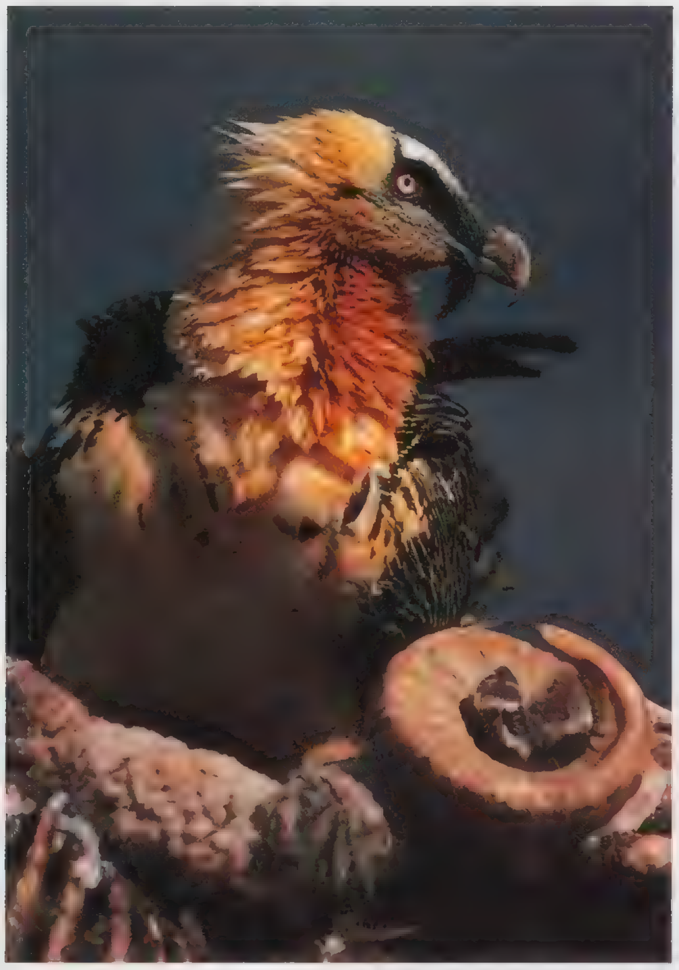
The origin and purpose of the pigmentation have been among the most controversial mysteries in the study of the Lammergeier. At first, scientists did not know whether this coloration came from an external source or was created by the bird itself. When studies of plumage from wild birds proved that the coloration was a result of iron oxide particles adhering to the feathers, researchers began a study to determine how these particles stuck to the feathers and what their purpose might be. Beginning in the early 1990s, a study involving a group of captive Lammergeiers in Vienna and my own observations of wild vultures in the Pyrenees showed that the birds bathe deliberately. On several occasions, I observed a bird disappear behind the mountain only to return a few minutes later with "dirty" plumage.

In January 1998, we finally found the secret location where the Lammergeiers bathe. The previous day, at this very site, we had seen an adult vulture going behind the foot of a rock wall and coming out with its plumage covered in pigment. There we found numerous feathers and other traces in the snow that proved this place was regularly used for bathing.

Several authors have proposed adaptive explanations for the rusty coloration: camouflage, protection against mallophaga parasites, protection against feather wear. As for the first hypothesis, it is not clear whether rust-colored Lammergeiers are less conspicuous than white ones. Besides, why should a Lammergeier seek camouflage? They are quite safe from terrestrial predators on their cliffs, and no other aerial raptor dares to hunt them. The remaining hypotheses have not been properly tested, but recent observations cast doubts on them. If only feather protection were at stake, no gender- or age-related differences in acquired coloration would be expected.

Several facts lead us to propose a novel hypothesis to explain the function of the cosmetic color of Lammergeiers. First, the birds acquire the color deliberately. And second, the birds are obviously very secretive when they bathe in rusty pigment sources—despite intensive field work, this behavior has rarely been seen in the wild. Similarly, captive birds

Author Antoni Margalida (below) takes a water sample at a vulture bathing site that he and his colleagues found in 1998. They had seen an adult vulture go to the foot of the rock wall and come out a short time later covered in the rusty pigment.



According to the author (at right), the rusty pigment that Lammergeiers apply to their feathers serves as a "status badge"—the birds with the deepest coloration tend to be the dominant individuals. Perhaps these richly colored birds are showing others of their species that they have a good knowledge of the area, including knowing the locations of the bathing sites, and a willingness to fight to be able to use the sites.

are wary and stop bathing if they are disturbed. All this suggests that cosmetic sites are precious resources that Lammergeiers do not want to share with others of their species. In this context, the rusty color could be used as a status signal during encounters with other Lammergeiers.

According to the status-signaling hypothesis, dominant individuals—more intensely colored—get benefits from their "status badges," because they reduce the number of aggressive contests they must engage in to maintain their dominance status or priority of access to food. Subordinate individuals—with paler colors—benefit from the system by avoiding interactions with superior individuals. We have proved this point through our observations at feeding stations, where different individuals concentrate and compete for food. During these encounters, the birds erect their head and neck feathers and swing their heads while remaining head to head with others of their kind, exposing the feather color to each other.

For a signal to convey reliable information about the individual it has to be costly. If there were no associated cost or extra effort involved in achieving a rustier colored plumage, all of the birds present would have the maximum level of color. But suitable cosmetic sites are probably scarce, at least for Eurasian Lammergeier populations. The cost associated with achieving this coloration could be the amount of time needed to search for or fly to an adequate source of color or that an individual might have to fight to use a cosmetic site if it is in another Lammergeier's territory. Deeply stained birds may also be signaling to other vultures that they have a good knowledge of their territory and surroundings—potential sources of iron-rich waters are few, and only the most experienced birds would know their locations. A good knowledge of the territory is probably essential for a species whose food is scarce and its availability unpredictable.

The differences among age classes and sexes support the status-signaling hypothesis: adult females, which are slightly larger than males and more dominant, tend to be more intensely colored. Immature birds, which do not have territories and are subordinate to breeding adults, tend to have less red in their plumage.

Without a doubt, the biology and behavior of the Lammergeier make this species one of the strangest and most distinctive raptors in the world, which is why I intend to continue studying this fascinating species for many years to come. ■

Antoni Margalida is a Spanish ornithologist who has studied Lammergeiers in the Pyrenees for more than a decade. John Cancalosi is an award-winning nature photographer based in England.

"WOW!"

"You could spend twice as much for the perfect birding binocular. But why?" **WARREN HARRINGTON** Birder, lecturer, guide • 3,594 life birds

It's already here. The new **Swift 820 Audubon®** has put it all together. It doesn't matter if you're slogging through a rain forest in the monsoon season like Warren Harrington or caught by a sudden storm 4 miles from the nearest shelter. Your new Swift 820 Audubon® will repel every drop of water.

Designed for birders by birders

The **Swift 820 Audubon®** took over two years in the making with valuable input from leading birders across the country. The results? A birding binocular that exceeds all expectations. And still at an affordable price.

952 Dorchester Avenue, Boston, MA 02125
e mail: swift1@tiac.net • Ph: 617-436-2960 • Fax: 617-436-3232
In Canada: Vision Canada LTD, Pickering, Ontario L1W 3S1
WEB: swift-optics.com

- STRONG – LIGHTWEIGHT MAGNESIUM BODY
- RUBBER ARMORED
- WIDE ANGLE
- BAK-4 PRISMS
- POP-UP EYECUPS
- U.S. PATENTED PRISM ADJUSTMENT SYSTEM
- 5-LENS OCULAR SYSTEM
- FULLY MULTI-COATED LENSES
- CLOSE FOCUSES UNDER 10 FT.
- WATERPROOF CONSTRUCTION
- LIFETIME WARRANTY

SWIFT®
SWIFT INSTRUMENTS
INCORPORATED
Quality Optics since 1926

SWIFT INSTRUMENTS, INC. *is a proud sponsor of* BIRDS at home STOKES
Discover the entire Swift line of quality optics at better specialty stores.

The Sapsucker Woods Society

RED-NECKED GREBES BY TIM GALLAGHER

You can turn a simple plan for your future into an investment for the birds. A planned gift in the form of a bequest or life income agreement is an ideal way to plan for your future, to retain real benefits for yourself, and to enhance the Lab of Ornithology's efforts in bird research and conservation. Lab friends who take advantage of this special investment opportunity will become charter members of the exclusive Sapsucker Woods Society.

For more details, contact Scott Sutcliffe, associate director, Cornell Lab of Ornithology, 159 Sapsucker Woods Road, Ithaca, New York 14850. Phone: (607) 254-2424; e-mail: <sas10@cornell.edu>.

Cornell Lab of Ornithology
Visit our web site at <http://birds.cornell.edu>

Partners in Preserving the Land

By Kristi G. Streiffert

Individuals, organizations, and even large corporations are exploring innovative ways to provide vital habitat for birds and other wildlife

“My uncle was always fond of saying that this land was pristine, but in reality, it has been hammered,” comments refuge manager Chris Miller during my tour of the Teller Wildlife Refuge in western Montana. But as we explore the privately owned refuge, I can see that 14 years of protection and restoration have done much to mend overgrazing and off-road-vehicle damage in these 1,180 acres along the Bitterroot River.

Miller’s uncle, long-time conservationist Otto Teller (who died in 1998), began buying parcels of river-bottom land in 1985, intending to protect it from the creeping subdivisions that were snaking up the valley. Since then, instead of welcoming condominiums and cabins, the refuge has sought to encourage Wood Ducks, Short-eared Owls, and Sandhill Cranes to live there. In an unusual approach, this nonprofit refuge supplements its revenue by pampering overnight guests at the three restored farmhouses that dot the property.

This thriving private wildlife sanctuary is just one example of the many land preservation approaches that have created a mosaic of protected habitats across the United States. Although national wildlife refuges, national parks, and other federally managed lands continue to protect the largest amount of natural habitat in the United States (the national wildlife refuge system alone protects 93 million acres), other kinds of preservation efforts are growing rapidly. Homeowners, farmers, corporations, for-profit tourism developments, and membership organizations are all contributing to form a patchwork quilt of habitats in an effort to preserve America’s natural diversity.

“More than two-thirds of our restorable habitat is on private land, and the federal government never could—and never would want to—purchase all that land in order to protect it. That is why a growing array of private initiatives and innovations are so vital to the environmental quality of life in the future,” says Martha Naley of the U.S. Fish and Wildlife Service (USFWS) habitat restoration program. “Federal and private habitat managers share some of the same struggles,” Miller points out when I ask him to compare the management of Teller with that of the nearby Lee Metcalf National Wildlife Refuge. “We both have to work to protect our perimeter lands and to find the money to purchase them, if possible.”

On the other hand “private initiatives have more freedom to move quickly when it seems necessary and to be creative,” he says, referring to the refuge’s decision to welcome vacationers. Hosting paying guests is only one approach to protecting habitat. Individuals working to restore ecological health to their own private land is another. On one end of the spectrum is billionaire Ted Turner, the largest private landowner in the United States, whose ranches in Montana, New Mexico, Florida, and other states are managed with the aim of restoring natural habitats. Turner’s land managers have projects underway to restore the Red-cockaded Woodpecker to his plantation in Florida, and they are considering reintroducing California Condors and Aplomado Falcons to suitable Turner-owned habitat in New Mexico.

At the other end of the scale, many smaller landowners have what may be, in the long run, even more important plans—planting native shrubs in their backyards to restore cover for songbirds (see “Bird Conservation Begins at Home” in the Summer 2000 issue). The Backyard Habitat Program of the National Wildlife Federation recently certified its 25,000th habitat—a yard in Austin, Texas, that provides all the basic needs for wildlife: food, water, shelter, and a place to raise young. The program also encourages schools and communities to plan their landscapes with the needs of wildlife in mind.

The privately owned Teller Wildlife Refuge (above) protects 1,180 acres in western Montana. This land, which had been damaged by overgrazing, is now on the mend, offering rich habitat for a variety of wildlife.

Kristi G. Streiffert

“Schoolyard properties may not offer large acreage for habitat restoration, but providing children with a restored wetland or butterfly garden and native trees is a great investment in the future,” says Naley, whose agency also offers support to school habitat programs.

And somewhere in between Ted Turner and the nation’s backyards and schoolyards are America’s farmers and ranchers, whose individual property holdings range from a few acres to thousands. A wide array of U.S. Department of Agriculture and USFWS programs have been established to help willing landowners with their habitat protection and restoration efforts. The USFWS’s Partners for Fish and Wildlife Program offers technical and financial assistance to private landowners who volunteer to restore wetlands and other habitats

BHL

Blank Page Digitally Inserted

KRISTI G. STREIFFERT

The Teller Wildlife Refuge helps to support its habitat restoration and protection efforts by providing overnight lodging for visitors in three restored farmhouses on the property. This is but one of the innovative ways that groups, individuals, and companies are helping to preserve rapidly diminishing natural habitats.

on their land. "The landowners who participate in these programs are an inspiration," says Naley. "They are taking responsibility and spending their own money to improve the quality of life for themselves, their children, and the nation." In recent years, more than 21,000 participants have restored 464,816 acres of wetlands; 447,953 acres of native prairie, grassland, and other upland habitats; and 2,769 miles of riparian and aquatic habitat.

Land trusts are another option for landowners who want to protect habitat on their property. Landowners can permanently protect the conservation value of their land by donating or bequeathing it to a land trust. Or they can donate a conservation easement—a legal agreement that permanently protects open space while leaving it in private ownership.

"The 21st century will bring both more development pressure and a greater realization that open space is a natural resource we cannot hope to regain once it has been lost to strip malls and asphalt," notes Land Trust Alliance president Jean Hocker.

Nonprofit land trusts have so far helped set aside five million acres. In Montana, the 11,694-acre Lazy E L Ranch has permanently limited development by providing a conservation easement to be held by the Montana Land Reliance (which protects nearly 400,000 acres across the state). This working ranch lies within the Greater Yellowstone ecosystem and is adjacent to the Absaroka-Beartooth Wilderness Area. It is a haven for some 300 species of wildlife, including mule deer, antelope, mountain lions, wolves, and grizzly bears.

Corporate-owned lands can be another source of protected, restored, or enhanced habitat. Unfortunately, many large corporations keep thousands of acres of company property landscaped with mowed grass and nonnative vegetation. Others, such as oil and utility companies, may own many acres of neglected or abused land. But in recent years, motivated conservationists (often birders) connected with these companies have realized that these properties offer a golden opportunity.

"Nearly one million acres in the United States are being successfully transformed by volunteers within these companies," says Bob Johnson, vice-president of the Wildlife Habitat Council (WHC), an organization formed to help these employees tap that potential. "The Wildlife Habitat Council assists corporations in plan-

HABITAT FOR WILDLIFE . . . AND HUMANS

Tourism-supported habitat protection seems to be an idea whose time has come. Across the nation, a growing number of private refuges and sanctuaries now offer lodging to visitors to help support the costs of restoring or preserving the natural habitats they contain. And some of them are actually profitable.

In the famed "Hill Country" of Texas, a partnership between a local corporation and a state-run utility company, along with various other organizations including regional birding and butterfly clubs, has resulted in the development of a new 64-room lodge and 940-acre "nature park." The acreage, owned by the utility but under the management of the Canyon of the Eagles Lodge and Nature Park, includes important habitat for the endangered Black-capped Vireo and Golden-cheeked Warbler, both of which nest there.

Although some opponents of this project say that this partnership is a dangerous first step toward privatization of public lands, Scott Goodwin (spokesman for Presidian, the company operating the lodge) says, "This is more than just a place to stay—it is a model for stewardship and is based on a commitment to education." The lodge offers camping, nature trails and programs, and daily boat trips along the lake. Call (800) 977-0081 for more information.

Another example of tourism supporting wildlife habitat has stood the test of time. Little Saint Simons Island, a 10,000-acre barrier island off the coast of Georgia, began accepting up to 30 overnight guests at a time in 1979. The lodging area is concentrated at one end of the island, and wildlife—including 220 species of birds—rule the rest. In 1999, the privately owned island was designated a shorebird reserve site by the Western Hemisphere Shorebird Reserve Network. Daily naturalist-led bird walks, other interpretive tours, and family programs offer a chance to explore this picturesque site. Call (888) 733-5774 for information.

And Teller Wildlife Refuge, mentioned in the main article, offers three charming homes for individuals, families, or groups and a "spoil-you-rotten" meal plan that includes a personal chef. Birds on the refuge include Lewis's Woodpecker, Osprey, Yellow-headed Blackbird, and many others. For reservation information, call (800) 343-3707.

BRIAN E. SMALL (2)

The Eagle Lodge and Nature Park, a 940-acre preserve in the Texas Hill Country, provides nesting habitat for the endangered Black-capped Vireo (above) and Golden-cheeked Warbler (below left). Profits from a 64-room lodge on the site support the Nature Park.

ning new sites, managing undeveloped lands, and reclaiming industrial lands," he says.

Some cynics may feel that these corporate efforts represent "green-washing" by polluters who are trying to mislead the public about their environmental records. But to have a million acres certified as dedicated wildlife habitat (under vigorous standards, with required visits by WHC biologists) is no small accomplishment. In Texas, for example, employees of the Dow Chemical Company replaced oyster-shell substrate (disturbed years ago when the site was constructed) to reinvigorate what has become the largest Black Skimmer colony on the Gulf Coast. One thousand skimmers fledged at the site in 1999. In Saint Louis, a team of Monsanto volunteers transformed a manicured office "campus" into a tall-grass prairie. They conducted their first controlled burn, necessary for prairie health, during the summer of 2000. "Unlike a federal agency charged with protecting a resource base, most of this work is done by employee volunteers, who motivate others and learn to work collaboratively with other community volunteers," says Johnson. "In the private sector, the challenge is building enthusiasm and establishing resources within the institution for what is a strictly voluntary effort on the part of the corporation."

Although many WHC members are seeking to turn lawns and office properties back into wildlife habitat, many others own large parcels of land that have significant potential for biodiversity, and they want to ensure that these acres are managed to benefit wildlife. These include utility companies, landfills, and military installations.

Thanks to the efforts of Dow Chemical employees, who replaced the oyster-shell substrate that had been disturbed years earlier when their plant was built, a Black Skimmer colony (above) was reinvigorated and is now the largest such colony on the Gulf Coast. Last year, 1,000 young skimmers fledged from the site.

TOM VEZO

Some membership organizations buy land for the express purpose of protecting it. Foremost among them is The Nature Conservancy (TNC), whose 1.1 million members have banded together to purchase and protect more than 11 million acres in the United States and more than 60 million worldwide. TNC often focuses on protecting unique and threatened habitats. The most famous of these for birders is Arizona's 380-acre Ramsey Canyon Preserve, where up to 14 species of hummingbirds enthrall thousands of visitors each year.

This veritable rainbow of approaches to habitat protection should lift the hopes of anyone concerned about providing a healthy future for birds, other wildlife, and humans. "Such an array of innovative approaches is key to habitat protection in the future," says Naley. "This is the only way we can have a healthy environment for future generations." ■

Kristi G. Streiffert is a freelance writer based in Sante Fe, New Mexico, and a frequent contributor to this magazine.

FOR MORE INFORMATION

Partners for Fish and Wildlife Program Voluntary Habitat Restoration, U.S. Fish & Wildlife Service, 1849 C Street NW, Room 400 – Arlington Square, Washington, DC 20240; telephone: (703)358-2201; web site: <http://partners.fws.gov>.

Wildlife Habitat Council, 1010 Wayne Avenue, Suite 920, Silver Spring, Maryland 20910; telephone: (301) 588-8994.

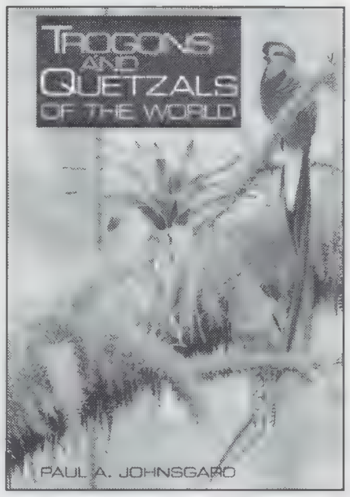
The Land Trust Alliance, 1331 H Street NW, Suite 400, Washington, DC 20005; telephone: (202) 638-4725.

Trogons and Quetzals of the World

Paul A. Johnsgard

Beautifully illustrated, this comprehensive review of trogons and quetzals—the first to be published in more than 150 years—covers all thirty-nine extant species. The book includes detailed species accounts, range maps, and identification keys as well as a chapter about the birds' biology, evolution, and behavior.

40 color, 19 black and white illus.,
13 b&w photographs • 223 pp. • Hardcover $49.95



The Pheasants of the World

Biology and Natural History

Paul A. Johnsgard

"A new edition of a popular work on this interesting and beautiful family. . . . This book brings together extensive information on the comparative biology and conservation status of wild pheasant populations."
—*Indiana Audubon Quarterly*

42 color photographs, 8 color lithographs, 68 b&w line drawings, 24 maps • 432 pp.
Hardcover $50.00

Raptor Watch

A Global Directory of Raptor Migration Sites

Compiled and edited by Jorje I. Zalles and Keith L. Bildstein

Published with BirdLife International and Hawk Mountain Sanctuary

Bringing together information from hundreds of raptor experts, this comprehensive guide provides detailed accounts of 388 globally significant "watchsites" organized by continents. For each site, the contributors document raptor species, migration periods, protection status, land use, and monitoring activities.

20 b&w photographs, 38 line illus. • 419 pp. • Hardcover $58.00
Volume 9 in the BirdLife Conservation Series

The Tanagers

Natural History, Distribution, and Identification

Morton L. Isler and Phyllis R. Isler

"Once in a very great while there is published a monograph of such profound scientific comprehensiveness and sentient aplomb that it immediately takes its place in the annals of natural history as a model of its kind."
—*Audubon Naturalist*

32 color plates, 263 maps • 406 pp. • Paperback $39.95

THE TANAGERS
Natural History, Distribution, and Identification
MORTON L. ISLER AND PHYLLIS R. ISLER

Books to Watch

Smithsonian Institution Press
PO Box 960 • Herndon, VA 20172 • 800/782-4612

Small, Lightweight, User Friendly, But Enough About The Price.

Look beyond the Minox price tag at its nitrogen-filled, rubber-armored metal body, fully multi-coated lenses, phase corrected roof prisms, and Lifetime Warranty backed by Leica. In short, reliability and performance much bigger than the price tag.

If you're a Minox owner, call it value. If you're not, call 800-222-0118 for the Minox dealer nearest you. Or ask your local sport optics retailer.

MINOX®
PRESENTED BY LEICA
copyright 2000 Leica Camera Inc.

THE WILD ALBATROSS CHASE

Searching for the bird of the century in New Jersey

BY CLAY SUTTON

"EXPLETIVE DELETED!" shrieked my workshop co-leader Louise Zemaitis, mainly into her cell phone, but the volume and desperate tone of her voice also carried her shrill oath to the parking lot, the nearby woods, and maybe even the sky above. Her expletive certainly got the attention of the Cape May Bird Observatory workshop group, loosely assembled around our vans, and brought all conversation to a standstill. Although it was only a garden-variety expletive, her intonation implied much more. This was not the kind of exasperated cry you emit when the dog pees on your carpet or a water pipe breaks. Suffice it to say, she didn't say "gosh."

"That doesn't sound good," I suggested to the gathered birders, because I knew that this was the expletive of a missed bird . . . a really good missed bird. And it was the first time I'd heard Louise use a word like that in the nearly 12 years I'd known her. I also had a pretty good idea of the identity of the missed bird.

We were at Forsythe (Brigantine) National Wildlife Refuge in New Jersey, and the caller was at Reeds Beach, near Cape May, an agonizing hour's drive away. We had been watching multitudes of shorebirds and having a grand time, but the caller was Louise's husband, Michael O'Brien, and he had just seen the albatross.

The albatross. Not a bird name you usually see written on the "Recent Sightings" board here or a field guide illustration often perused by New Jersey birders. Albatrosses may cross the mind, however wistfully, of nearly every birder who signs up for a pelagic trip, but seeing an albatross in the North Atlantic can only be a distant, furtive hope: the ultimate wish bird. In my several thousand hours of seabird-watching over the past 25 years, an albatross had always been a background dream, a fervent desire, but in reality only a fantasy with about the same probability as winning the lottery. Only once in the storied history of Cape May ornithology has an albatross been seen, when the late and great Harold Axtell saw two Black-browed Albatrosses together off the South Cape May beach during an easterly gale in October 1974.

The saga of the bird that would become, arguably, the bird of the century for Cape May had begun two days earlier, on May 21, 2000. Shawneen Finnegan, a Cape May regular of exceptional skill and background (and unimpeachable integrity—an important factor in what she was about to report), was driving north on the Garden State Parkway, about six miles north of Cape May City. She was heading for an artists' reception, navigating Sunday-at-the-shore homeward-bound traffic in the left-hand lane, when she saw an albatross gliding just above eye level alongside her car, flying above the grassy median strip. Shawneen later told how she dove for the right lane and then the shoulder, briefly skidding at the edge of control on the wet grass before jumping from her car to watch the bird for maybe a minute longer before it disappeared.

My wife Pat and I were privileged to have dinner with Shawneen that same evening, to enjoy her sketches of the bird and relive her story of how she had dashed into a nearby lumberyard. I'm sure the staff will talk for years about the crazy woman who rushed inside, claiming an emergency and begging to use the phone, and then shouted into the phone about an albatross as she attempted to alert the local birding community.

That evening, Shawneen's excitement was still palpable, infectious, her trademark smile even wider than normal. "Then the albatross disappeared behind the trees," she concluded—a phrase probably never before spoken in North American birding.

Despite hundreds of hours of searching by dozens of birders later that day and the next, the wayward overland albatross hadn't been relocated. Shawneen was sure of the ID—an adult Yellow-nosed Albatross *(Diomedea chlororhynchos)*—but it looked like it would remain a brief, one-day, single-observer sighting, destined to tease the rest of us forever.

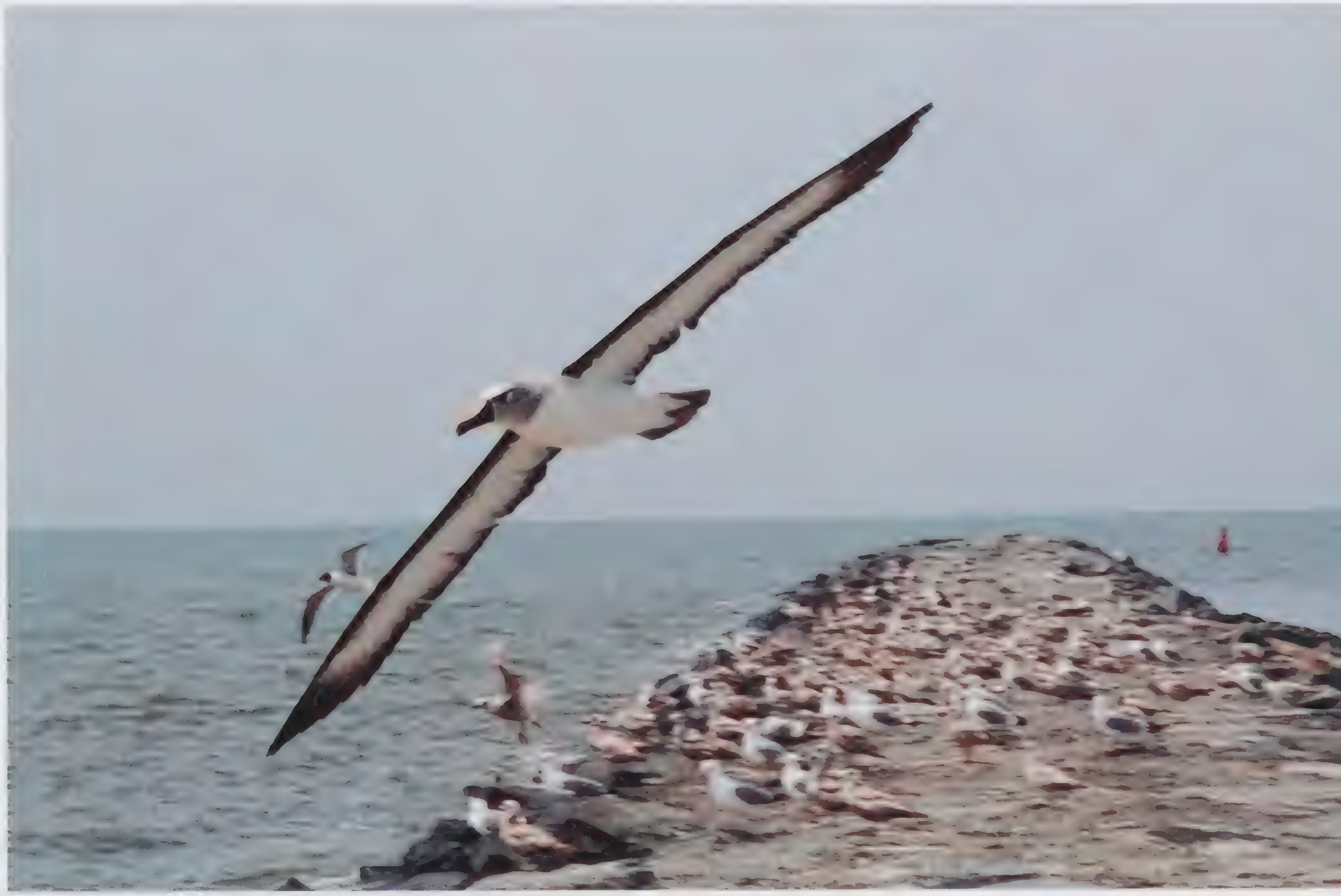
On Tuesday, the third day after the sighting, our workshop group had just finished a tour of the dikes at Brigantine when Louise got "the call." "Oh my God, the albatross is back," revealed Louise to 15 riveted, turned heads. "It was first seen over Route 47, then it flew up and down the beach at Reeds. It's still there now!" Louise, Pete Dunne, and I held a brief, hurried leaders' powwow. What to do? Reeds Beach, on New Jersey's Delaware Bayshore, was at least an hour away. It was past noon, and we hadn't eaten lunch. Pete, who eschews chasing the way a cat dislikes water, lobbied quietly against it, more with a raised eyebrow than voiced concerns. He had a point. After all, this was a Cape May Bird Observatory (CMBO) workshop, not a birding tour. It was designed to foster learning—shorebird identification, warbler song—not for chasing rare birds. An afternoon spent on an albatross odyssey would inevitably bump something else from the busy schedule, either classroom or fieldwork, so it was a decision of consequence. We had already "wasted" two hours of precious workshop time in fruitless scanning over the Cape May "rips" (a likely spot, theoretically, to spot the albatross) on the first day of the workshop. What to do now?

I, who frankly held little hope of actually catching up with the albatross, looked at our dilemma in reverse. What if hundreds of others saw the bird and we didn't even try? And, even if we didn't see the bird, what could be worse than not trying for the bird of the century? The eager looks on the faces of the workshop participants, even the few beginners, decided the day. We'd go for it! Lunch was forgotten, promised for later. Saddle up, now! You snooze, you lose.

Smokin' down the Parkway with the hammer down, two white, 15-passenger vans in caravan, on a wild albatross chase. We drove with one eye on the rearview mirror and the other on the sky. After all, it *was* first seen over the Parkway.

"Michael called again, it's headed south," yelled Louise as she hung out the other van's passenger window like a summertime teenager as both vans accelerated away from a toll booth. "Let's head for the concrete ship," she shouted. This landmark, an excellent sea-watch vantage point at the tip of the Cape May peninsula, might be the best spot to intercept the bird.

As we pulled into the parking lot at the end of Sunset



TONY TOOLE

Seeing an albatross in the North Atlantic has to be the dream of everyone who signs up for a pelagic birding trip, but it's a faint hope at best. Who could have predicted that this Yellow-nosed Albatross (above) would come sailing over Cape May beaches (and woodlands), thrilling dozens of birders, this past May?

BHL

Blank Page Digitally Inserted

Boulevard exactly one hour later, Louise's cell phone ominously rang again. "The albatross is still north of us—it was just seen at Kimbles Beach—it seems to be working back and forth," said Louise hurriedly. "It's headed toward Reeds Beach again." Now, though, lunch was mandatory. The workshop participants ate as we leaders desperately scanned the bay and sky to the north, waiting, hoping. Each Northern Gannet drew a second look. A distant speck Sooty Shearwater, normally a great bird, got hardly a notice. We were after bigger fish.

With lunches eaten (or at least purchased), orders were shouted: "Back in the vans, we're heading north to Reeds!" Our route meant secondary roads now—travel would be slower, and it would take at least 25 minutes. We made a hasty decision. Because it was shorebird and horseshoe crab season, and albatross seekers might be out en masse, Reeds Beach might be crowded and parking difficult. Better to go to Cooks Beach instead, another landing on the Delaware Bay, just south of Reeds Beach—both quicker and easier to get to.

Thousands of gulls filled the skies, making binocular scans a living kaleidoscope.

We turned off Route 47 and raced down the rural gravel road to Cooks. Ten birders were already stationed there, and you could instantly separate the haves from the have-nots. The have-nots scanned furiously, with grim looks on their faces. The haves chatted together, animated, with the most self-satisfied smiles imaginable. John Danzenbaker, the American Birding Association's top world list holder, ably proved that you can never tire of the chase. He had just secured both his American Birding Association area and state Yellow-nosed Albatross and a bit of history. He said simply, grinning broadly, "For once I was in the right place at the right time."

"It was here just fifteen minutes ago," said friend and colleague Jim Dowdell. "No need to look for the wing pattern. It was so close you could easily see the yellow on the top of the bill. It headed south, soaring back over the trees." My heart sank. South? Had we actually passed it en route? Would it return? Did we screw up? We scanned constantly, perhaps a bit desperately, out over the water and back over the trees. Thousands of gulls filled the now-lowering skies, making binocular scans a living kaleidoscope. An albatross may be huge, but amid the spectacle of May on Delaware Bay, finding it could be like the classic needle in a haystack, spotting one bird out of the tens of thousands that filled the bayshore skies.

After 20 minutes, albatross enthusiasm began to wane a bit, but there was plenty to do, much to look at. Trying to put the workshop back on course, Pete and Louise continued to teach—about horseshoe crabs in the tide line, separating Sanderling from Semipalmated Sandpiper, alternate versus basic plumages. Nervous flocks of Red Knots hurried past, brick red and gray against steel water and silver sky.

We don't give a Most Valuable Player award in our workshops, because every participant always brings so much—background, perspective, enthusiasm, and enjoyment. Nevertheless, John Gluth from Brentwood, New York, will always have the sculpted albatross, crafted by Louise's son, Bradley, that we presented to him with heartfelt thanks at our farewell group dinner at week's end.

"I think I have the albatross," John, standing next to me, said quietly yet firmly. I followed his gaze. Size or not, picking the bird out of hundreds of soaring gulls took a few precious moments. The bird was wing-on, going away. Albatross or not? Gannet maybe? I remember a fleeting indecision. Then it turned toward us, offering a full profile from the upper side. The white upper tail coverts gleamed. "Here it comes," I screamed.

And there it was, gliding back and forth against the scudding clouds. It was behind us, not over the beach or bay, but unbelievably back over the woodlands, for cripe's sake!

The albatross rode the sky with the grace of a gull, insouciant to the wind, in full control. It never flapped once, or even circled, but just rode the freshening northeast wind over the marshes and trees, quartering back and forth, a master of dynamic soaring. The bird seemed to dominate the land every bit as well as albatrosses have conquered the sea.

I selfishly stole one good view (okay, two) of the banking bird through the scope, then remembering our mission and duty, worked to get others on the scope, on the bird. Louise called out constant directions, instructions. Pete, putting his substantial skills to work, adroitly cycled people through his scope, deftly finding it again for each new arrival behind the eyepiece. As it drifted away to the south, still over the trees, I yearningly watched it disappear in my binoculars. The gently down-curved, long-winged shape is indelibly imprinted in my memory and will be forever.

Then everyone was talking at once—impressions, questions, comparisons, superlatives. A successful chase, the thrill of victory. For beginner and veteran alike, it was, to understate it, a once-in-a-lifetime experience, a life bird for everyone save Antarctic veteran Pete. Not only was it a wayward bird, at least 4,000 miles out of range, but it was a full hemisphere away from home. Cape May has perhaps seen rarer birds—the 1993 Whiskered Tern (a first record for the Western Hemisphere) or maybe even the 1990 Mongolian Plover (the first for the East Coast and even farther out of range from its Siberian breeding grounds and Australian winter home than the albatross). Yet, I think everyone who saw the bird will agree, there may never be, maybe cannot ever be, a bird of greater outright charisma than our Yellow-nosed Albatross. If it is not the bird of the new century, I hope I am there to see what supplants it.

Much has already been said about the wayward alba-

KEVIN KARLSON

Word of the albatross brought birders from all over New Jersey as well as other states to search the beaches of Cape May for the elusive vagrant. "You could instantly separate the haves from the have-nots. The have-nots scanned furiously with grim looks on their faces. The haves chatted together, animated, with the most self-satisfied smiles imaginable."

tross, from the cover story of *The Press of Atlantic City* to the *New York Times* and even to the "ABC Nightly News" with Peter Jennings. Certainly far more will be written. Excellent photographs obtained by several lucky folks will no doubt grace the covers and pages of *North American Birds, Records of New Jersey Birds,* and many other publications.

What was almost certainly the same bird had been sighted earlier in Buzzards Bay, Massachusetts, on May 9, and at Fire Island, New York, on May 15. After departing New Jersey (it was last seen about an hour after our fortuitous encounter), the Yellow-nosed Albatross was subsequently seen in Rhode Island and Nantucket. It was believed to be visiting land in search of a nesting colony and a mate—a partner it will probably never find in the North Atlantic. Even though it is winter, the nonbreeding season in the Southern Hemisphere, at Tristan da Cunha and other islands where Yellow-nosed Albatrosses breed, it is quite conceivable that years—perhaps even decades—in the North Atlantic could have reset the bird's biological clock. A Black-browed Albatross returned to the same gannetry in the Orkneys for nearly 20 years, building a nest for a mate that sadly never came. It is interesting and curious that such an event as a lost and lonely albatross can cause such a jubilant celebration for birders.

Yet celebrate we did. The bird was toasted more than a few times. Even two weeks later, whenever any two birders met, they talked of the albatross incessantly. Has it been refound? Where do you think it will be seen next? Kiptopeke maybe? Cape Hatteras? Do you think it might return next year?

For me there are a couple of interesting footnotes. Cooks Beach, where we finally caught up with the bird, is a place I've known for years, all of my life actually. Cooks Beach is about three miles from our home, and Reeds Beach is even closer as the albatross flies. My friend Jerry Liguori, a fish and game biologist, was one of the first to spot the bird Tuesday morning, when it was refound after Shawneen's initial discovery on Sunday. He followed the bird up Route 47 into the town of Goshen and watched it fly virtually right over our backyard. Imagine, had I been home, the possibility of having Yellow-nosed Albatross on our yard list? For an inveterate yard-lister, it's almost too much to consider.

Pat and I walk our dog at Cooks Beach about once a week, and we have been visiting Reeds Beach, our local "patch," for 25 years. I had thought that someday, among the vast and magnificent spring shorebird concentrations that occur there (the third largest known gathering in the world), someone would find a good bird, a *really* good bird.

I had thought of birds such as Broad-billed Sandpiper, Rufous-necked Stint, even Great Knot. But never, never-in-my-wildest-dreams had I conceived that I would one day stand at Cooks Beach, surrounded by shoals of shorebirds, and watch a Yellow-nosed Albatross soaring over the woods, or that during our CMBO workshop I would have the privilege of sharing the bird with 15 excited friends and students of bird study.

Such is the joy of birding. WOW! Few words can say so much and express it so simply and fully. Except, maybe, "[EXPLETIVE DELETED]!" ■

Clay Sutton is a freelance writer based in Cape May, New Jersey, and the author (or co-author) of several birding books.

New Jersey Audubon Society's
Cape May Bird Observatory

54th Annual

Cape May Autumn Weekend

THE Bird Show

Congregate... where the birds migrate

Cape May, NJ

October 27-29, 2000

hawks...owls...thousands of seabirds...
tens of thousands of migrating songbirds...

Celebrated speakers: Pete Dunne, David Bird, Pat Sutton, Clay Sutton, David Sibley, Kenn Kaufman, Kevin Karlson, Paul Lehman, and more!

Join birding's finest for a Festival that could only happen in Cape May, NJ

- vendors galore
- wildlife art show
- hawk & owl demos
- workshops
- programs
- field trips
- boat trips

For info call or write:
New Jersey Audubon
Cape May Bird Observatory
701 E. Lake Dr., Cape May Point, NJ 08212
Ph: 609-884-2736 • Fx: 609-884-6052
www.njaudubon.org

VENDOR INQUIRIES WELCOME

BINOCULARS AND SPOTTING SCOPES

EAGLE OPTICS *RAPTORS* - BINOCULARS FOR BIRDERS

Phase-Corrected Prisms
Waterproof/Fogproof
Rubber Armored
Exceptionally Lightweight
Fully Multi-coated Lenses
Extremely Close Focusing
Long Eye Relief
Twist-Up Eyecups
Lifetime Warranty
backed by Leica USA
Customer Friendly Prices

Currently available in 8 X 32 and 10 X 42!

Authorized U.S. Dealer for:
Leica, Swarovski, Zeiss, Swift, Nikon, Celestron, Bausch & Lomb, Kowa, Questar, Tele Vue, Pentax, Canon, Meade, Steiner, Leupold, Bushnell, Minox, Burris, Fujinon, Eagle Optics, Bogen, Gitzo, Brunton, ITT

Get the best information, advice *and* value from Birders who know: Birds, Birders, Birding and Birding Equipment. We've built a nation-wide reputation on offering birders the best in selection, service and prices on quality optic products. Let our courteous and knowledgeable sales staff gladly assist you in selecting from our complete and extensive inventory.

EAGLE OPTICS

FREE 48 page Optic Buying Guide & Discount Price List

☎ ***(800) 289-1132***

Comprehensive Online Buying Guide

www.eagleoptics.com

2120 W. Greenview Dr. #4 * Middleton, WI 53562

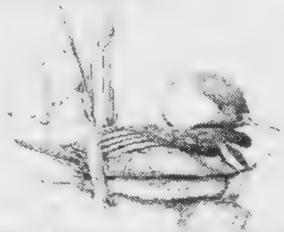
CORNELL LAB of ORNITHOLOGY
Project FeederWatch Sponsor

THE AMERICAN BIRDING ASSOCIATION

PO Box 6599
Colorado Springs, CO 80934
phone: 800/850-2473 or fax: 719/578-1480
E-mail: member@aba.org
Web Site: www.americanbirding.org

Join the American Birding Association — the only North American association for field birders. Get involved with bird education, conservation projects and

- Stay in touch with the latest issues in birding through **Birding** magazine and **Winging It** newsletter.
- Find all of the books, optics, and accessories you need in **The Birder's Catalog**.
- Make contact with local birders as you travel using our **Birder's Resource Guide**.
- Join us at birding **conferences** and **conventions**.



"The best value in birding today!"

Looking for a great bird slide?

SHORT-BILLED DOWITCHER BY TIM GALLAGHER

The Cornell Lab of Ornithology has a vast collection of excellent bird slides, available individually or in specially priced sets. Use our slides to fill gaps in your own slide shows or purchase complete sets, some of which include written scripts or taped narrations and bird sounds. Photographs are also available for commercial use. Write today for our free catalog or visit our web site at <http://birds.cornell.edu>.

CORNELL LAB OF ORNITHOLOGY
159 Sapsucker Woods Road, Ithaca, New York 14850
Phone: (607) 254–BIRD e-mail: <birdslides@cornell.edu>

Picture Perfect

BLENDING INTO THE BACKGROUND

Text and photographs by Tim Gallagher

Hints on hiding yourself from birds

One thing quickly became clear to me when I first started photographing wildlife: it's hard to get a decent-sized image of a bird. For one thing, most birds are small, so you have to get really close to them to get a good picture. But everything in a wild bird's genetic makeup encourages it to flee at the approach of something as large and threatening as a human. I'll never forget the disappointment I felt when I got my first roll of bird slides back from the processing lab. Although most of the images were in focus and well lit, the birds—mostly White-crowned Sparrows and House Finches—seemed almost microscopically small. I knew that if I was ever to have the faintest hope of producing publishable pictures of birds, I'd have to try something different, but just what I wasn't sure.

The first thing I did was to buy some camouflage clothing—actually a set of Marine Corps combat fatigues I found at a war surplus store. They were great: tough, comfortable, and with roomy cargo pockets on the pants to hold film, lens caps, and other gear. The only problem was that the blotches of green, brown, and black camouflage coloring on the fatigues really didn't blend in at all with the places where I was doing most of my photography—in the desert or on the beach. Camouflage is a relative term, and what blends in completely in one kind of habitat may stand out boldly from the background in another. So I learned my lesson, and now I always choose clothing that matches the area where I'm taking pictures (blotchy dark greens and browns for marsh and woodland habitats; tans for the desert; white for snow).

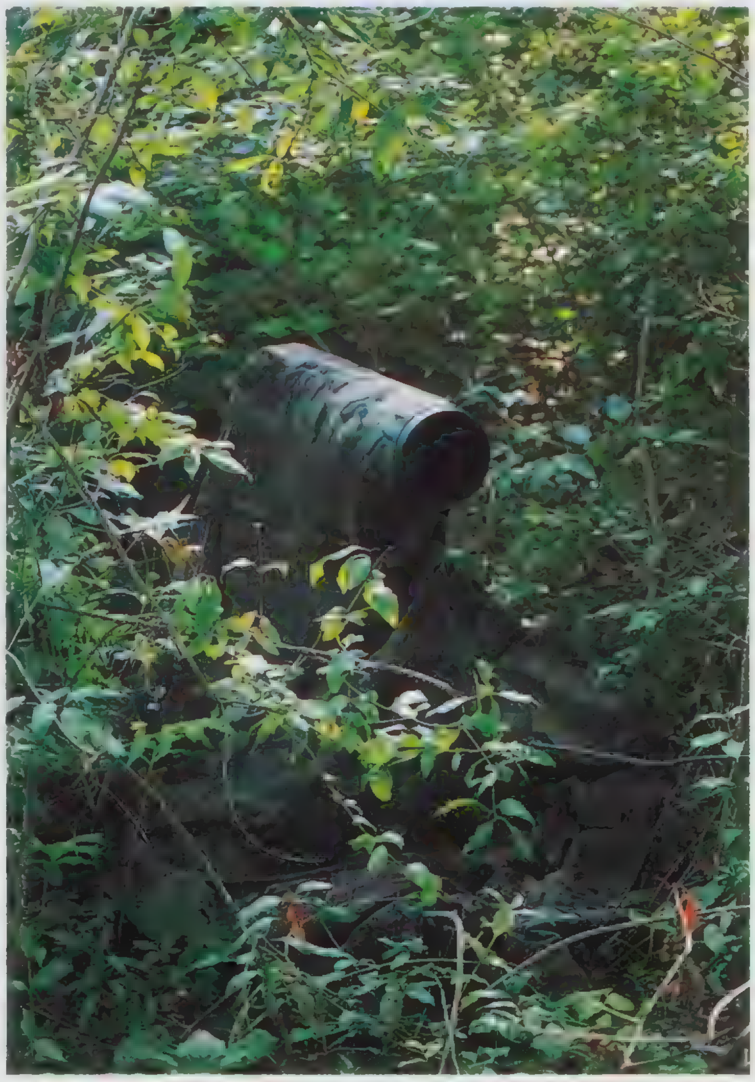
But no matter how well your clothes match your surroundings, they won't do you any good if your actions in the field make you too conspicuous. If you stand around in the open, if you're noisy, and if your movements are too broad and quick, you won't get close to many birds. Instead, try backing into some dense foliage in a likely looking area for birds. Then sit down and relax. Stay as motionless as you can and let your camouflage work for you.

If you have a pale complexion, sunlight reflecting off your skin can be a problem, advertising your presence like a bright beacon to passing birds. Some people smear sludge-colored face paint or even dirt on their faces to minimize this problem. I've never gone that far, but I do sometimes wear a camouflage headnet, which both hides my face *and* keeps mosquitoes away.

Shiny metal tripods also sometimes scare birds. Neutral gray or black tripods are much less noticeable than chrome-finished tripods. If your tripod is too bright or reflective, you can wrap camouflage tape around the top section of each leg. This tape is used by hunters to make their shotgun barrels less conspicuous and is available at most sporting goods stores. But be sure to get the kind of tape that comes off easily without leaving a gooey mess.

Of course, the most effective way to hide from birds is to use a blind, and every wildlife photographer should have at least one. I've had birds come so close to me while I was hiding in a blind that I couldn't focus my telephoto lens on them and had to opt for a less powerful lens. You'll find many ready-made portable blinds advertised in photography magazines and catalogs, and some of them are nice—lightweight, easy to set up, and extremely compact when disassembled and packed.

One commercially made blind that I often take with me on trips is the "Pocket Blind," sold by L. L. Rue Enterprises <http://www.rue.com>. The big advantage of this one is that it has no framework and takes up about the same amount of space in your luggage as a pair of jeans. It's basically just a large piece of camouflage material that you drape over yourself and



This frameless blind is simple, but it effectively disguises the human form.

BIRD
The Migration Mainline
Cape May, NJ

Contact us about:
Birding Information
Accommodations
Guides for Hire
Schedule of Events
3,4&5 Day Birding Workshops
Field Trips
Daily Walks
Optics
Natural History Books
Birding Software
Videos
and more!

Plus:
54th Annual
Cape May Autumn Weekend...THE Bird Show
October 27-29, 2000

18th Annual
World Series of Birding
May 12, 2001

Cape May Spring Weekend
May 18-20, 2001

NEW JERSEY AUDUBON SOCIETY
Cape May Bird Observatory
Northwood Center
PO Box 3, 701 East Lake Dr.
Cape May Point, NJ 08212
Ph: 609-884-2736
Fx: 609-884-6052
Hotline: 609-861-0466
www.njaudubon.org

Birding Optics
•
Field Apparel
•
Essentials

www.upstart-crow.com
888-597-9794

Interpretive Birding Bulletin

A resource for interpreting behavior

The *IB Bulletin* is written for birders interested in developing their skill at interpreting behavior and for naturalists interested in learning more about bird behavior without consulting academic journals. Each issue contains feature articles, selected shorts, and behavioral snapshots of N. American birds. Subscribers are also invited to join the "ibirding" listserve, dedicated to behavior watchers.

For sample articles and reviews visit our website: **www.ibirding.com**

The *Bulletin* is published 6 times a year for a price of $30. To subscribe send a check to:

Interpretive Birding Bulletin
1800 11th Ave SE
St. Cloud, MN 56304
Dr. Jim Davis, editor@ibirding.com

DROLL YANKEES®
Presents a Backyard Comedy
1-800-352-9164 www.yankeeflipper.com www.drollyankees.com

If you can blend in well with the surroundings, it is much easier to take close-up pictures of wary birds such as this Semipalmated Plover.

your tripod and then attach snugly around your telephoto lens with Velcro. But even this simple blind is expensive (about $80), and sometimes you really want to have a blind with an internal frame so that you can move around inside it without disturbing the birds, and these are even costlier (more than $200).

If you decide to build your own blind, many sporting goods stores sell camouflage material by the yard. I often carry a few yards of it in the back of my car, just in case I need to put together a quick blind in the field. Sometimes you can just drape the material over shrubbery to hide yourself, without erecting any structure at all. Or just hammer four pointed 3½-foot-long 2x2s firmly into the ground, attach the camouflage material to them with a staple gun, and cut a slit for your telephoto lens. Voila! An instant blind. If you're ambitious, you can design a more formal blind, using an elaborate framework of wood or PVC pipe to hold the camouflage material.

Burlap is an inexpensive alternative to camouflage cloth as a covering for your blind. Lawn shops and farm and garden supply stores frequently sell it by the yard. This drab brown material blends in well with many habitats just as it is, right off the roll. But, if necessary, it's easy to change its color, using fabric dye in a washing machine.

Always take time to study an area carefully before you set up your blind. Look for places where birds are present at particular times of day, and check out what the background is like and whether there are any objects that will get in your way when you're taking pictures. If plant cover is available, try to set up your blind so that it blends in naturally with it. Whenever possible, let your blind stand in the field for a few days before using it. Birds quickly become accustomed to the presence of a blind.

And don't forget to make your blind as comfortable as possible. You may be spending hours at a time in it. It should be at least three feet high, so you can sit up and change your position if you get stiff. In damp or guano-covered places, put down a waterproof ground cloth to keep you and your equipment clean and dry. And take plenty of water and snacks.

Whether you use an elaborate blind or simply wear camouflage clothing, once you learn the importance of blending into the background, you'll find that your ability to get close to wild birds will improve enormously. But you must be willing to wait. Remember, patience is the greatest virtue and the supreme skill in bird photography. ■

Before the next flight, upgrade to first class.

If birding has become a lifetime pursuit, consider binoculars worthy of your commitment. LEICA's unmatched combination of legendary optics, ergonomics, and field reliability elevate you to the pinnacle of performance. With light gathering abilities that extend your birding day. LEICA, field mark of the serious birder. Call toll-free for the dealer nearest you.

LEICA
The Optical Advantage
1-800-222-0118
Leica Camera Inc., 156 Ludlow Avenue, Northvale, NJ 07647 © 1999 Leica Camera Inc

The Catbird Seat

RAIN MAN

by Pete Dunne

The weatherman had been predicting rain all week, and he was almost right. It wasn't raining. It was pouring.

"Nobody," I said to my reflection in the windshield, "would be dumb enough to show up for a bird walk in this."

But I was wrong. There, in a parking lot that was more lake than lot, was a single vehicle, with a birder too stubborn or naïve to stay out of the rain.

I moored my car, took a deep breath, and waded to the rear bumper. Popping the hatch, I started tugging on my wellies, trying to ignore the icy rivulet flowing down the back of my neck.

At this sublime moment, my yellow-slicker-clad patron splashed up for a parley. Leaning forward, directing a stream of water off his sou'wester into my unfooted boot, he said: "You're not going to cancel are you?"

"No," I said, emptying the boot. "I like pelagic birding."

This seemed to soothe him. "It could be worse," he said. "After all, it could be a *cold* rain. Cold rain is much worse than warm rain."

What can you say in the face of such irrefutable testimony?

"You know," he continued—and I did know! I could draw a line that connected all the banal, rain-related observations he'd already raised to guess what his next utterance would be: "I'd rather go birding in rain than . . ."

Well, not me. I *hate* getting wet. Hate it in a way that makes the hydrophobia of cats look like the aqua-equanimity of seals. While others get to conduct their birding in places like Arizona and Southern California, I seem fated to forage in places like Sitkagi Beach, in coastal Alaska—a geographic blotter that absorbs 160 inches of rain, sleet, or snow a year (sometimes all three at once).

In 1982, I was conducting a spring hawk count there and had been warned to bring the best weather gear I could find. Accordingly, I went to the local yachting store and bought the most expensive, sophisticated "weather gear" on the rack. Decked out in this techweenie-wonder, I could have walked into any yacht club in the world and been ushered to the best seat at the bar.

I don't know what "weather gear" is supposed to do. One thing it doesn't do is shed water. Fifteen minutes after our plane dropped us off on Sitkagi Beach, I was soaked to my polypros. I stayed that way for 10 cold, miserable days.

I later wrote a scathing letter to the manufacturer of the "Ultimate Weather Gear," who replied that my product was clearly defective and sent a replacement. The replacement was just as defective.

I recall a very wet spring waterfowl trip at (then) Brigantine National Wildlife Refuge that occupied a single day in March—but seemed to last for 40 days and 40 nights. At least 30 cars were in the caravan. Co-leader Pete Bacinski and I spent the day walking up and down the line, pointing out rain-grayed duck silhouettes to a host of birders, who were—I say with sincere admiration—too intelligent to get out of their cars.

And few who participated will ever forget the 1998 World Series of Birding—a day that was likened by one surviving team captain to birding in a carwash. Ten inches of rain were recorded at our dawn site that day (most of it fell in the two hours we lingered there). I had three excellent rain suits in my kit—two of which were sodden by 5:00 A.M. I didn't bother putting on the third. What was the point?

The weather was *so* bad that some of the world's finest waterproof binoculars became internally fogged. *So* bad that when teammate Rick Radis's spotting scope was slammed against the dock by the wind, popped off the tripod into the water, and started bobbing out to sea, I simply walked away. It was raining too hard to see anything anyway.

You say you've been wet, too? You say you fail to see how I've been singled out for water torture? Well, have you ever been to Alice Springs, heart of the desert, Australia—a place with an average rainfall of, oh, a trace? I have. Once. Leading a bird tour.

It rained.

So, maybe now you'll appreciate what brought me to interrupt my rain-slickered patron in the middle of his philosophical rubric concerning the merits of birding in wind versus rain. Maybe now you can understand why my leader-equanimity slipped its mooring. Why my head snapped up. Why I silenced him with a glance. Why I said in a slow, even monotone: "You aren't going to tell me how you 'would rather bird in rain than wind' are you?"

"Uh huh," he said.

"If you say it, so help me I'll drown you," I promised. "Let's go."

We stayed out a full two hours. We didn't see a single bird that we couldn't have seen from the car. ■

ILLUSTRATION BY JEFF SIPPLE

PREMIUM PERFORMANCE AND VALUE

NEWEST SLC BINOCULARS ARE EVEN BETTER

Constantly improving the SLC line of binoculars is a continuing goal of the Swarovski Optik engineers. As a result, these rugged Swarovski SLC Binoculars are the newest and very best available anywhere in the premium value category. The proven SLC's have new features like:

- A special, one-piece, protein armor covering in the latest ergonomic design
- Easy to use, locking diopter wheel
- Twist in-out eyecups. Perfect for those who choose to view through eyeglasses
- Newest, fully, multi-layered Swarotop® coating on all air-to-glass lens surfaces for even greater color fidelity, contrast and light transmission
- Newest, phase-correcting, roof-prism coating and mirror technology for brilliant resolution and truest color phase correction

When you are ready to consider the purchase of a new pair of premium quality binoculars, and want the very best value for your money, then visit your Swarovski Optik Dealer. Compare performance, value, our legendary warranty and features with any other brand on the planet.

SWAROVSKI
OPTIK
WITH THE EYES OF A HAWK
Swarovski Optik N.A., Ltd.

New, A Spotting Scope in your Pocket! 2X Doubler fits screw-in, eyepiece threads of 7 & 10X42 SLC, 7, 8 & 10X50 SLC and 8 & 15X56 SLC binoculars. It doubles the power of the one ocular tube!

You'll see. Call 800-426-3089 or visit www.swarovskioptik.com